

MHC-MC1

SERVICE MANUAL

*US Model
E Model*

- MHC-MC1 is composed of following models.
As for the service manual, it is issued for each component model, then, please refer to them.

COMPONENT MODEL NAME

COMPACT DISC DECK RECEIVER SYSTEM	HCD-MC1
SPEAKER SYSTEM	SS-MC1

SPECIFICATIONS

General

Power requirements

US model: 120 V AC, 60Hz
E model: 110 - 120 V or 220 - 240 V AC, 50/60Hz

Power consumption

US model: 200 watts
E model: 250 watts

Dimensions (w/h/d)

Approx. 280 x 373 x 437 mm (11 1/8 x 14 3/4 x 17 1/4 in)

Mass Approx. 11.2 Kg (24 lbs. 11 oz)

Supplied accessories:

AM loop antenna (1)
Remote RM-SF150 (1)
Batteries (2)
FM lead antenna (1)
Speaker cords (2)
Front speaker pads (8)

Design and specifications are subject to change without notice.

PARTS LIST

Ref. No.	Part No.	Description	Remark
ACCESSORIES & PACKING MATERIALS			

	1-501-374-11	ANTENNA, LOOP	
	1-501-659-41	ANTENNA (FM)	
	1-558-848-11	CORD, SPEAKER (3m) (SS-MC1)	
	3-866-408-11	MANUAL, INSTRUCTION (ENGLISH)	
	4-210-254-01	CUSHION (FOOT) (SS-MC1)	
	4-991-151-21	BATTERY COVER (FOR RM-SF150)	
	8-719-636-90	REMOTE COMMANDER (RM-SF150)	

MINI Hi-Fi COMPONENT SYSTEM

SONY®



HCD-MC1

SERVICE MANUAL

US Model
E Model



- This set is the tuner, deck, CD and amplifier section in MHC-MC1.

Manufactured under license from Dolby Laboratories Licensing Corporation.

“DOLBY” and the double-D symbol  are trademarks of Dolby Laboratories Licensing Corporation.

CD Section	Model Name Using Similar Mechanism	HCD-F150/FR10
	CD Mechanism Type	CDM-46B1
	Optical Pick-up Name	KSS-213BA/F-NP
Tape deck Section	Model Name Using Similar Mechanism	HCD-DR8AV
	Tape Transport Mechanism Type	TCM-230AWR2/230PWR2

SPECIFICATIONS

Amplifier section

U.S.A models:

AUDIO POWER SPECIFICATIONS

POWER OUTPUT AND TOTAL HARMONIC DISTORTION:

With 8 Ω loads both channels driven, from 70 – 20,000 Hz; rated 80 W per channel minimum RMS power, with no more than 0.9% total harmonic distortion from 250 mW to read output.

Continuous RMS power output
80 + 80 W(8 Ω at 1kHz, 10% THD)

Total harmonic distortion
less than 0.09%(8 Ω at 1kHz, 40W)

Inputs

VIDEO/MD IN (phono jack):
voltage 250mV/450mV,
impedance 47k Ω

Outputs

VIDEO/MD OUT (phono jack):
voltage 250mV,
impedance 1k Ω

PHONES (stereo phone jacks):

accepts headphones of 8 Ω or more

SPEAKER : accepts impedance of 8 to 16 Ω

REAR SPEAKER :

accepts impedance of 16 Ω

SUPER WOOFER :

Voltage 1V, impedance 1k Ω

CD player section

System

Compact disc and digital audio system

Laser

Semiconductor laser (λ =780nm)

Emission duration:

continuous

Laser output

Max. 44.6 μ W*

*This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block with 7 mm aperture.

Frequency response

2Hz – 20kHz ($\pm$ 0.5dB)

Wavelength

780 – 790nm

Signal-to-noise ratio

More than 90dB

Dynamic range

More than 90dB

CD OPTICAL DIGITAL OUT

(Square optical connector jack, rear panel)

Output Level

–18dBm

Tape player section

Recording system 4-track 2-channel stereo

Frequency response (DOLBY NR OFF)

40 – 13,000Hz ($\pm$ 3dB),

using Sony TYPE I

cassette

40 – 14,000Hz ($\pm$ 3dB),

using Sony TYPE II

cassette

Tuner section

FM stereo, FM/AM superheterodyne tuner

FM tuner section

Tuning range 87.5 – 108.0MHz

Antenna FM lead antenna

Antenna terminals 75 Ω unbalanced

Intermediate frequency 10.7MHz

— Continued on next page —

MINI HI-FI COMPONENT SYSTEM



SONY®

AM tuner section

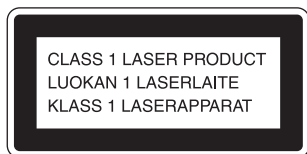
Tuning range	530 – 1,710kHz (with the interval set at 10kHz) 531 – 1,710kHz (with the interval set at 9kHz)
Antenna	AM loop antenna
Antenna terminals	External antenna terminal
Intermediate frequency	450kHz

General

Power requirements	US model : 120V AC, 60Hz E model : 110 - 120V or 220 - 240V AC, 50/60Hz
Power consumption	US model : 200W E model : 250W
Dimensions (w/h/d)	Apprex. 280 × 373 × 437mm (11 ¹ / ₈ × 14 ³ / ₄ × 17 ¹ / ₄ in)
Mass	Apprex. 11.2kg (24 lb 11 oz)
Supplied accessories:	AM loop antenna (1) Remote RM-SF150 (1) Batteries (2) FM lead antenna (1) Speaker cords (2) Front speaker pads (8)

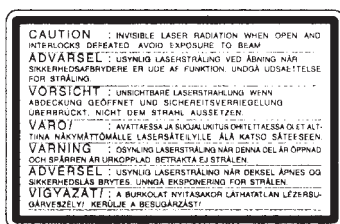
Design and specifications are subject to change without notice.

Laser component in this product is capable of emitting radiation exceeding the limit for Class 1.



This appliance is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.

The following caution label is located inside the unit.



CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

SAFETY CHECK-OUT (US model only)

After correcting the original service problem, perform the following safety checks before releasing the set to the customer: Check the antenna terminals, metal trim, “metallized” knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers’ instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The “limit” indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

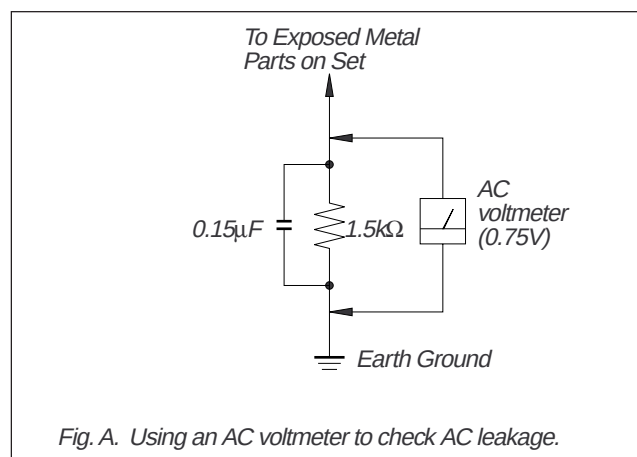


Fig. A. Using an AC voltmeter to check AC leakage.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK $\triangle$ OR DOTTED LINE WITH MARK $\triangle$ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SERVICING NOTES

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.

During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.

The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

LASER DIODE AND FOCUS SEARCH OPERATION CHECK

Carry out the “S curve check” in “CD section adjustment” and check that the S curve waveform is output repeatedly.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270 °C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

TABLE OF CONTENTS

1. GENERAL

FRONT PANEL	5
REAR PANEL	6

2. DISASSEMBLY 8

3. TEST MODE 16

4. MECHANICAL ADJUSTMENTS 18

5. ELECTRICAL ADJUSTMENTS

Deck Section	21
CD Section	24

6. DIAGRAMS

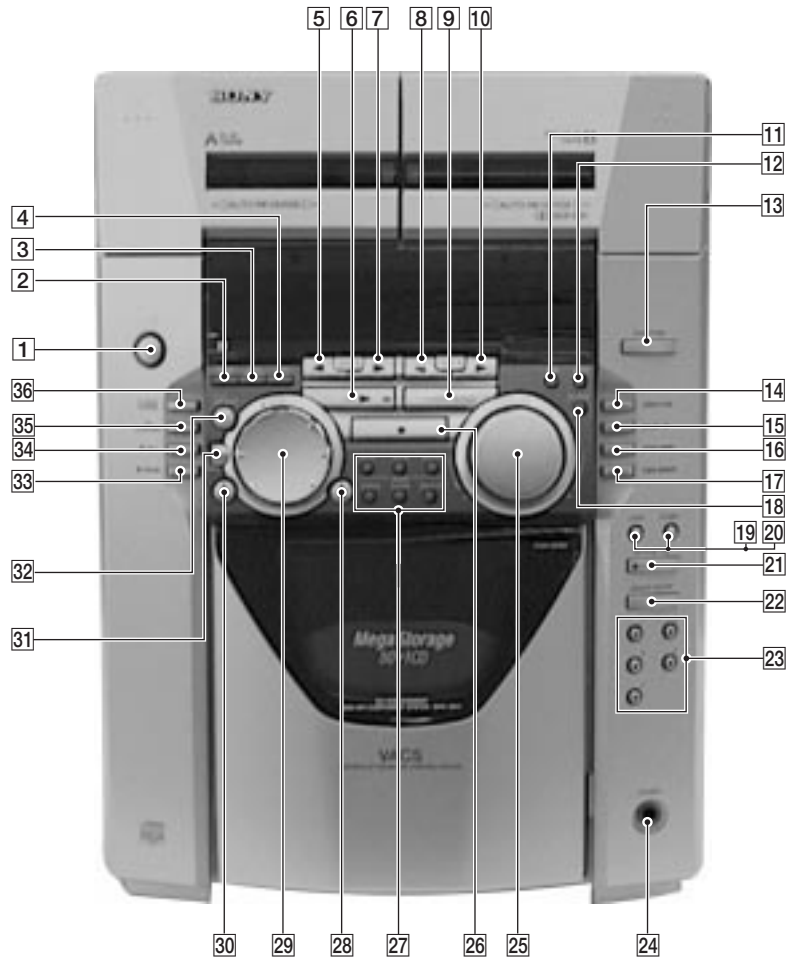
6-1. Block Diagram CD Section	27
Block Diagram Main Section	29
Block Diagram Audio Section	31
6-2. Circuit Boards Location	33
6-3. Printed Wiring Board BD Section	35
6-4. Schematic Diagram BD Section	37
6-5. Printed Wiring Board CD Motor Section	39
6-6. Schematic Diagram CD Motor Section	41
6-7. Printed Wiring Board Audio Section	43
6-8. Schematic Diagram Audio Section	45
6-9. Printed Wiring Board Leaf SW Section	47
6-10. Schematic Diagram Leaf SW Section	49
6-11. Printed Wiring Board Main Section	51
6-12. Schematic Diagram Main (1/5) Section	53
6-13. Schematic Diagram Main (2/5) Section	55
6-14. Schematic Diagram Main (3/5) Section	57
6-15. Schematic Diagram Main (4/5) Section	59
6-16. Schematic Diagram Main (5/5) Section	61
6-17. Printed Wiring Board Panel Section	63
6-18. Schematic Diagram Panel Section	65
6-19. Printed Wiring Board Power Section	67
6-20. Schematic Diagram Power Section	69
6-21. Waveforms	71
6-22. IC Pin Function Description	72
6-23. IC Block Diagrams	80

7. EXPLODED VIEWS 81

8. ELECTRICAL PARTS LIST 89

SECTION 1 GENERAL

FRONT PANEL



- 1 I/⏻ button
- 2 DISPLAY/MEMO button
- 3 CLOCK TIMER SET button
- 4 TIMER SELECT button
- 5 TAPE A ◀ button
- 6 CD ▶⏮ button
- 7 TAPE A ▶ button
- 8 TAPE B ◀ button
- 9 TUNER/BAND button
- 10 TAPE B ▶ button
- 11 SUR button
- 12 DBFB button
- 13 FUNCTION button
- 14 CONTINUE/DIRECTION button
- 15 PROGRAM/DOLBY-NR button
- 16 SHUFFLE/STEREO/MONO button
- 17 REPEAT/TUNER MEMORY button
- 18 GROOVE button

- 19 LOOP button
- 20 FLASH button
- 21 CD PLUS ONE button
- 22 GROUP ENTRY button
- 23 Numeric buttons
- 24 PHONES jack
- 25 VOLUME Knob
- 26 STOP button
- 27 INPUT, SCAN, SEARCH, CHECK, CLEAR, DELETE buttons
- 28 CD ▶▶+, ▶▶⏮ button
- 29 SELECTOR button
- 30 CD ◀◀, ◀◀⏮ button
- 31 ENTER button
- 32 FILE SELECT button
- 33 ⏮ PAUSE button
- 34 ● REC button
- 35 CD SYNCHRO button
- 36 HI-SPEED DUBBING button

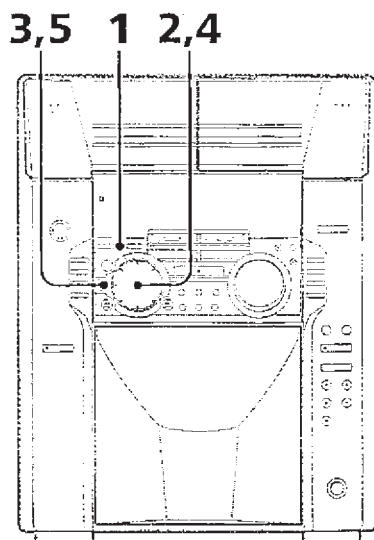
REAR PANEL



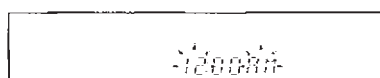
- 1 VIDEO/MD (AUDIO) jack
- 2 ANTENNA terminal
- 3 AC power cord
- 4 REAR SPEAKER terminal
- 5 SPEAKER terminal
- 6 CD DIGITAL OUT connector
- 7 SUPER WOOFER jack

Step 3: Setting the time

You must set the time before using the timer functions.

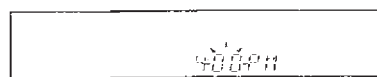


- 1** Press CLOCK TIMER SET.
The hour indication flashes.



- 2** Turn SELECTOR to set the hour.

- 3** Press ENTER
The minute indication flashes.



- 4** Turn SELECTOR to set the minute.

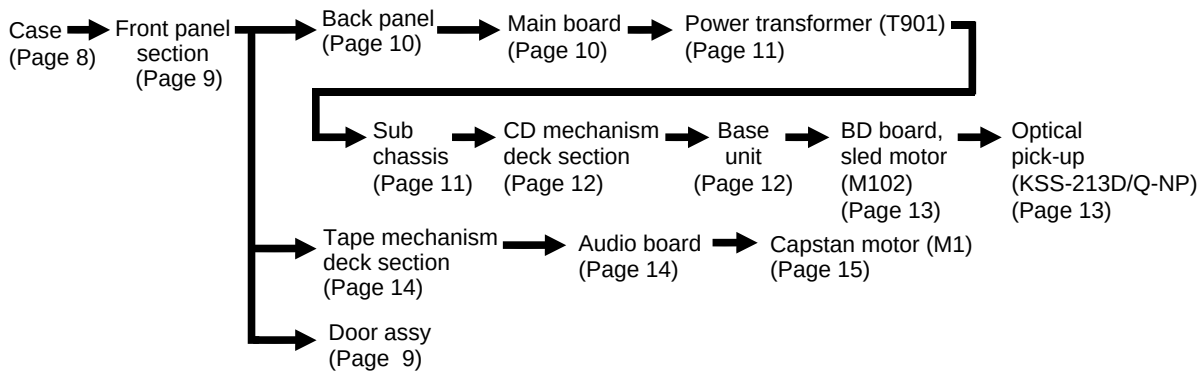
- 5** Press ENTER.
The clock starts working.

Tips

- If you've made a mistake, start over from step 1.
- Setting the time deactivates the demo mode.
If you want to display the demo mode, press DISPLAY/DEMO when the power is off.
- The above explanation shows you how to set the time while the power is off. To change the time while the power is on, do the following:
 - 1 Press CLOCK TIMER SET.
 - 2 Turn SELECTOR to select "SET CLOCK".
 - 3 Press ENTER.
 - 4 Do steps 2 through 5 above.

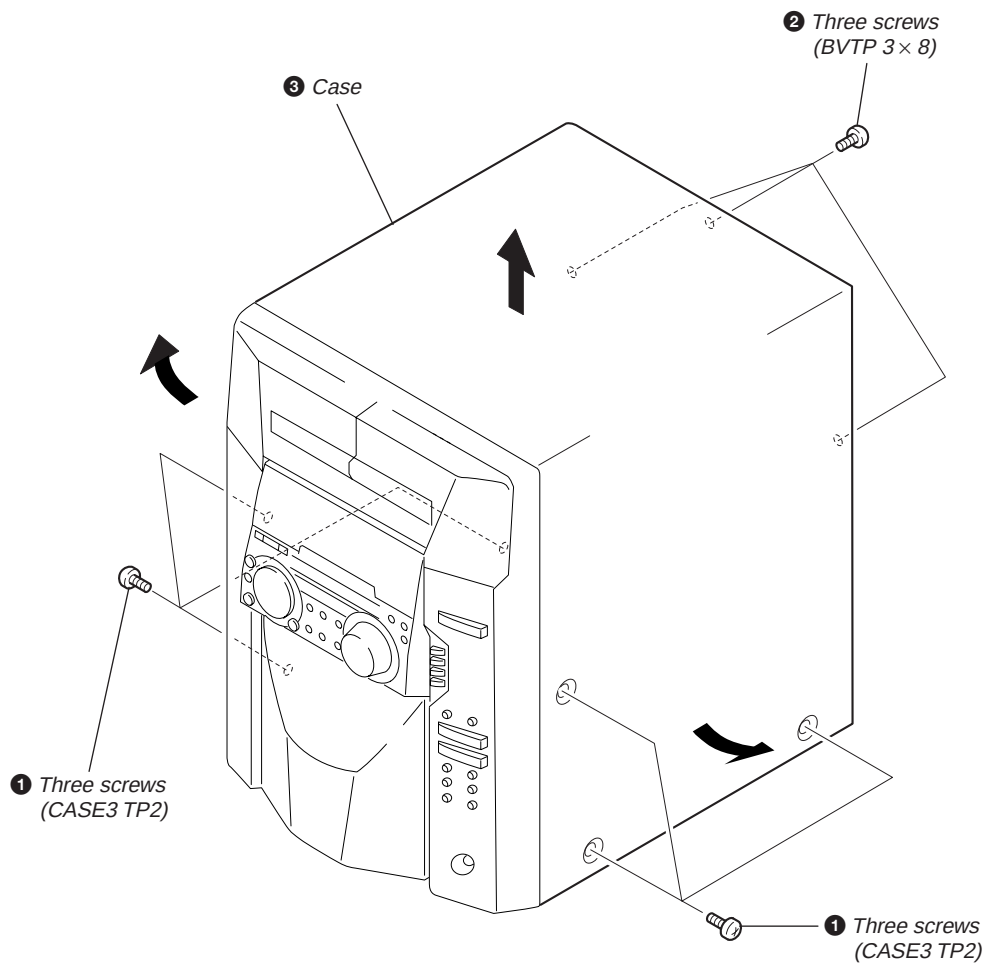
SECTION 2 DISASSEMBLY

- This set can be disassembled in the order shown below.

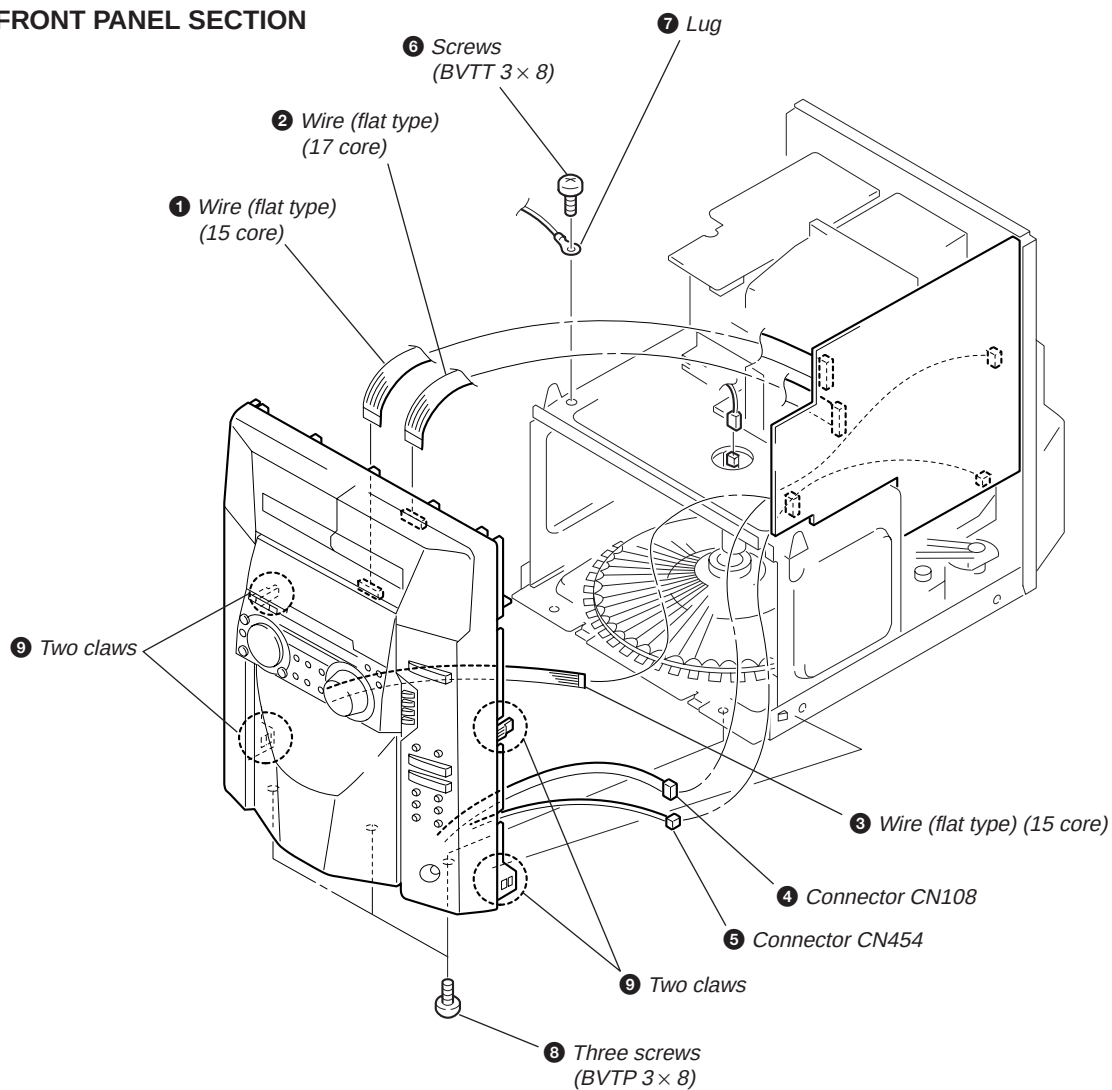


Note: Follow the disassembly procedure in the numerical order given.

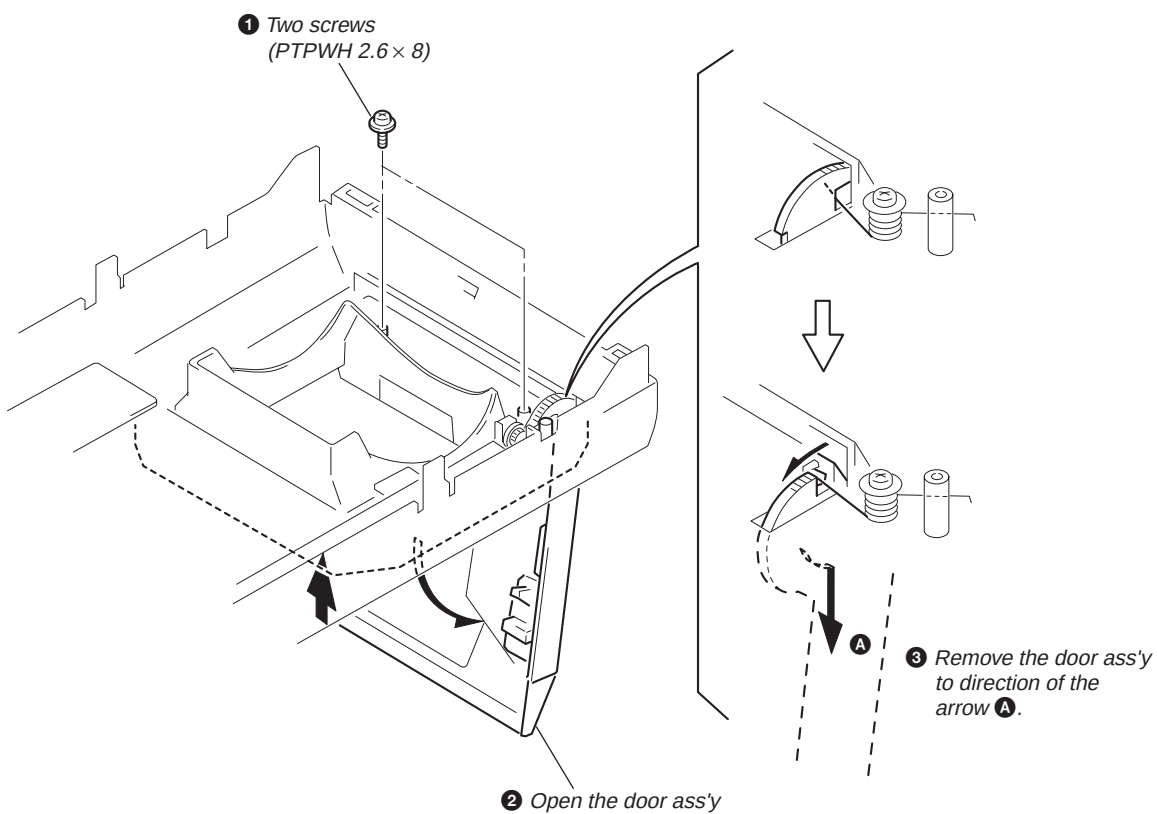
2-1. CASE



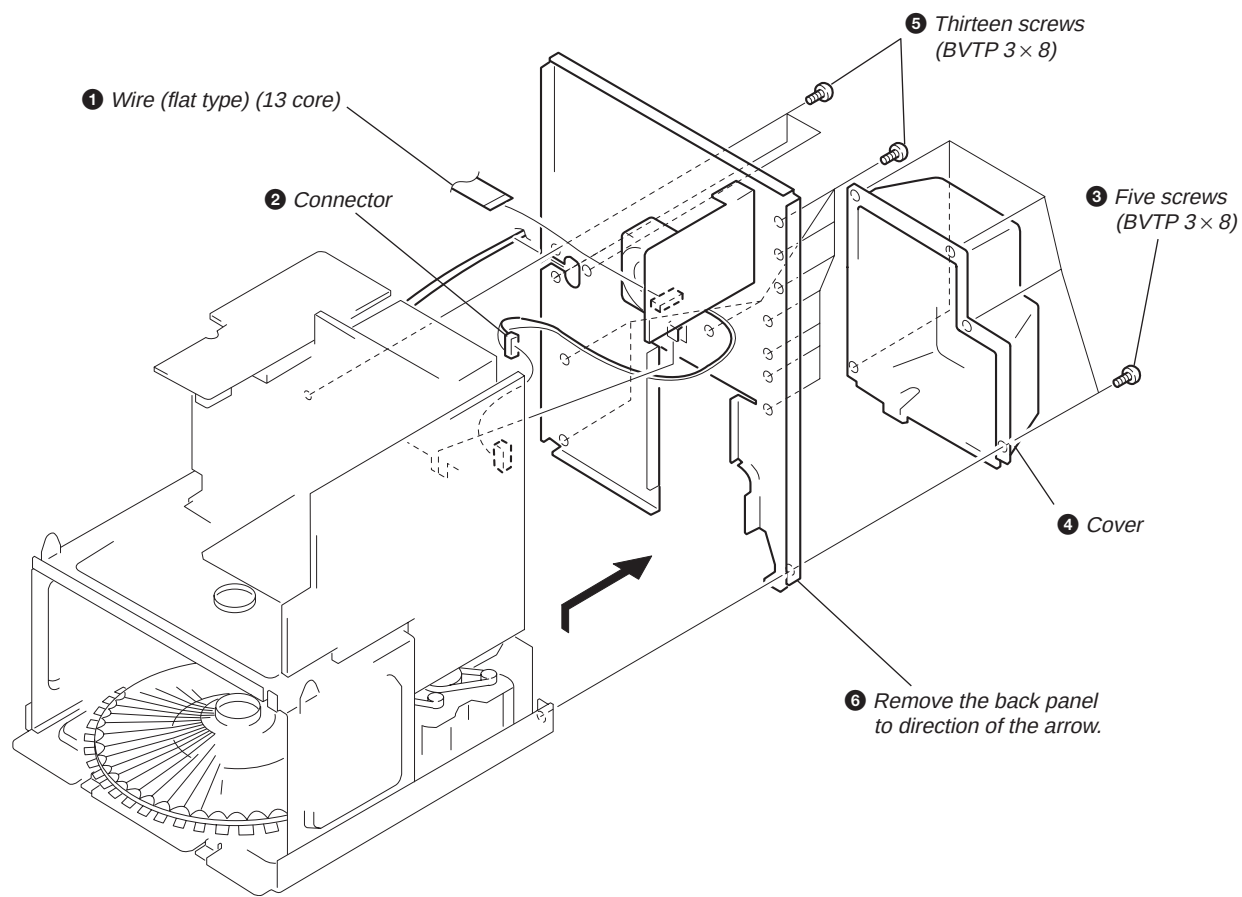
2-2. FRONT PANEL SECTION



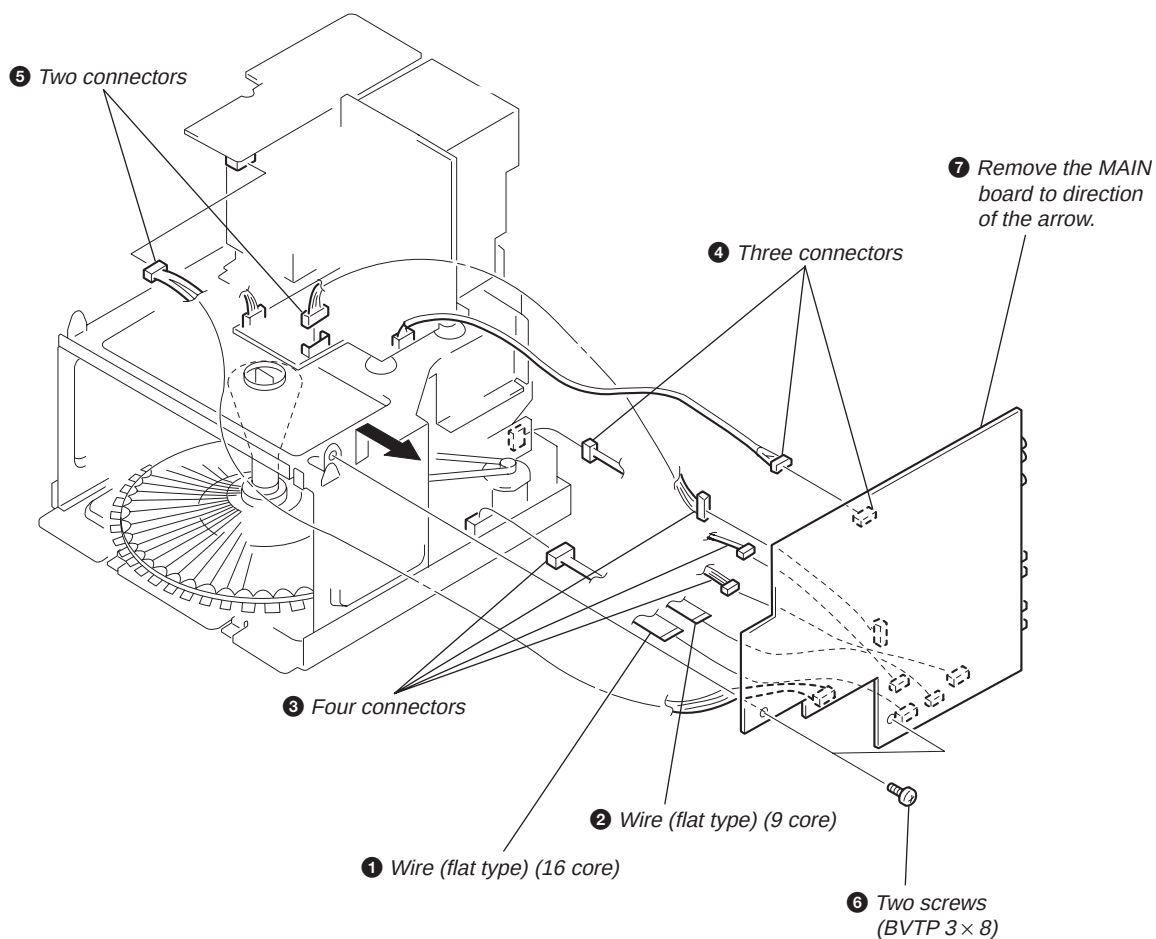
2-3. DOOR ASSY



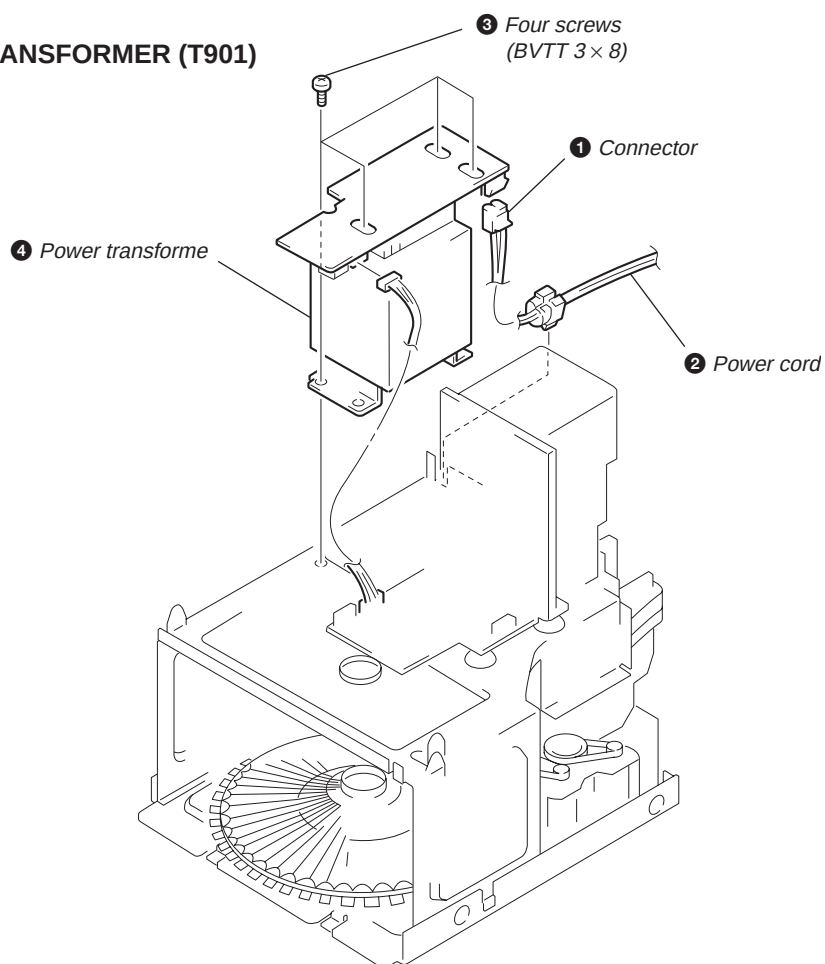
2-4. BACK PANEL



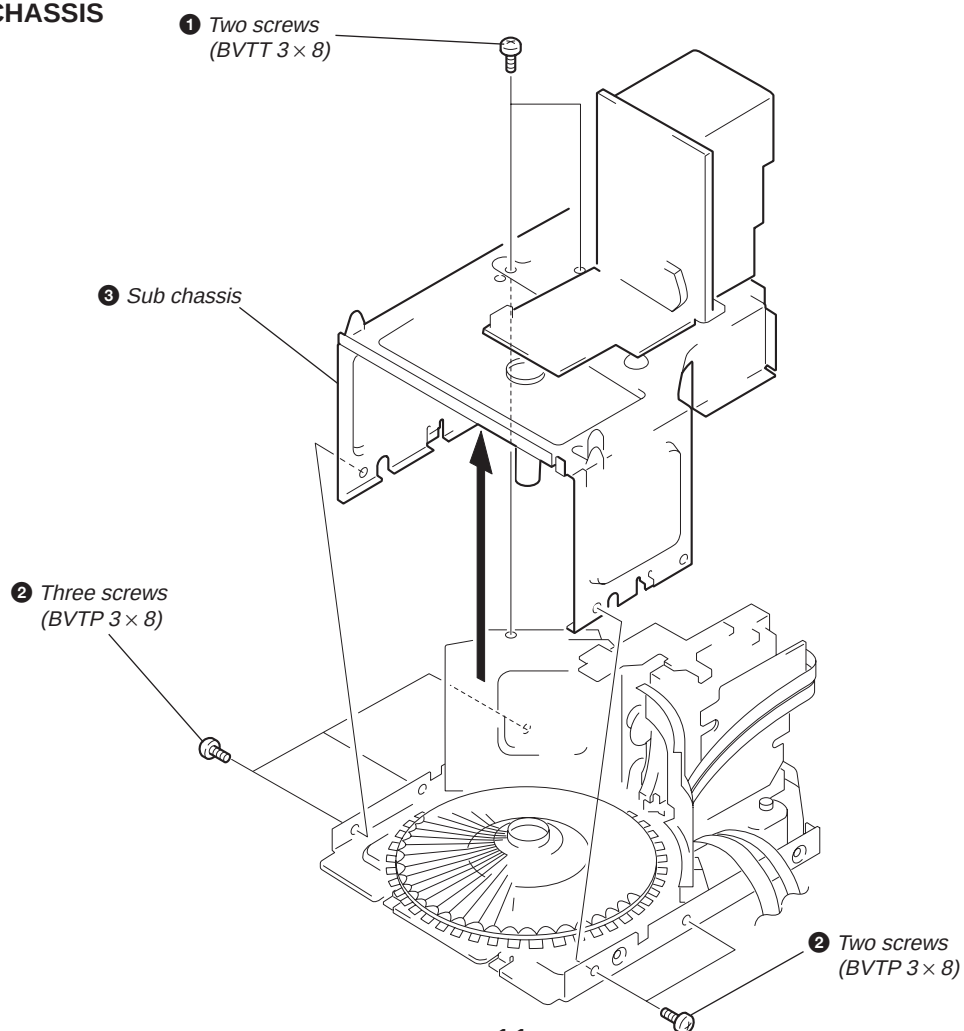
2-5. MAIN BOARD



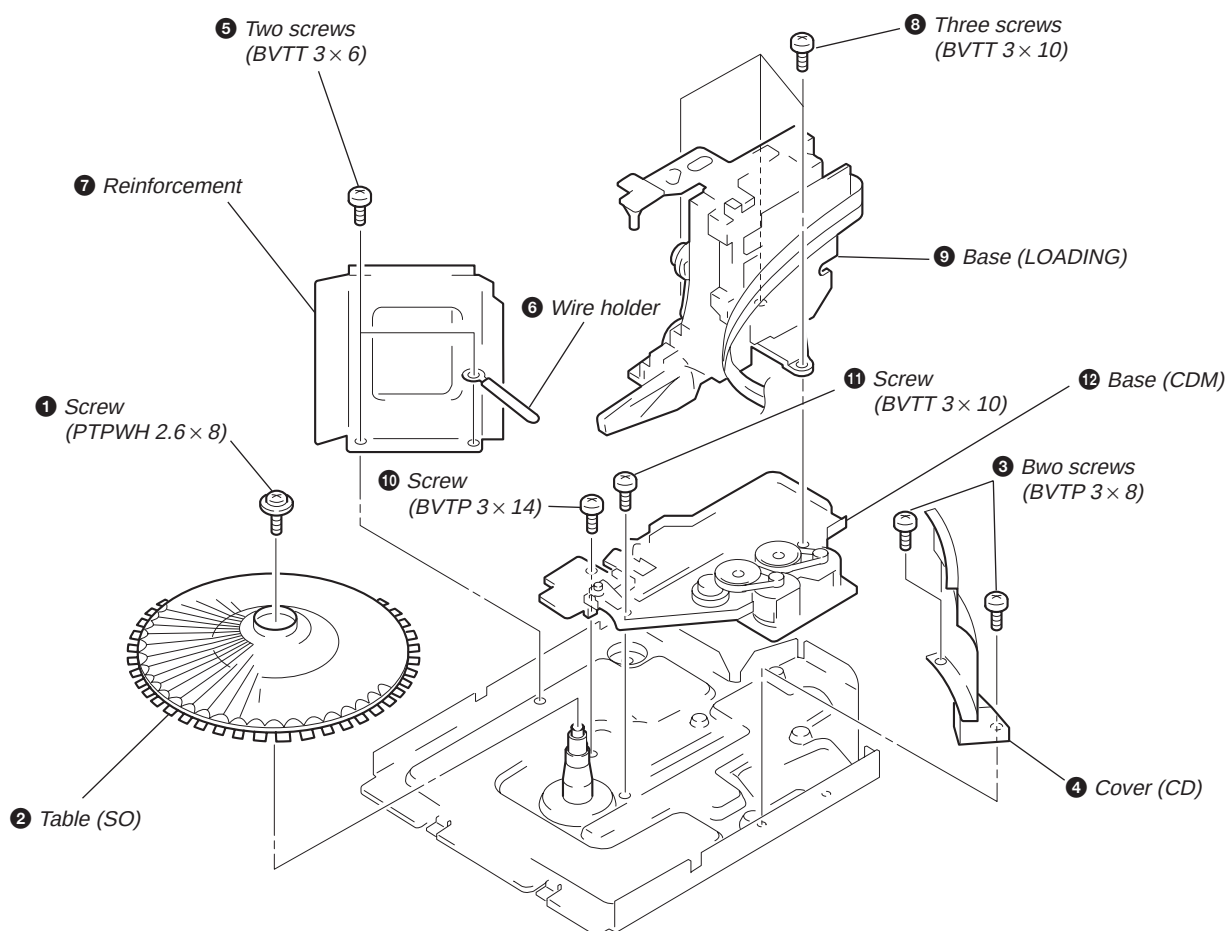
2-6. POWER TRANSFORMER (T901)



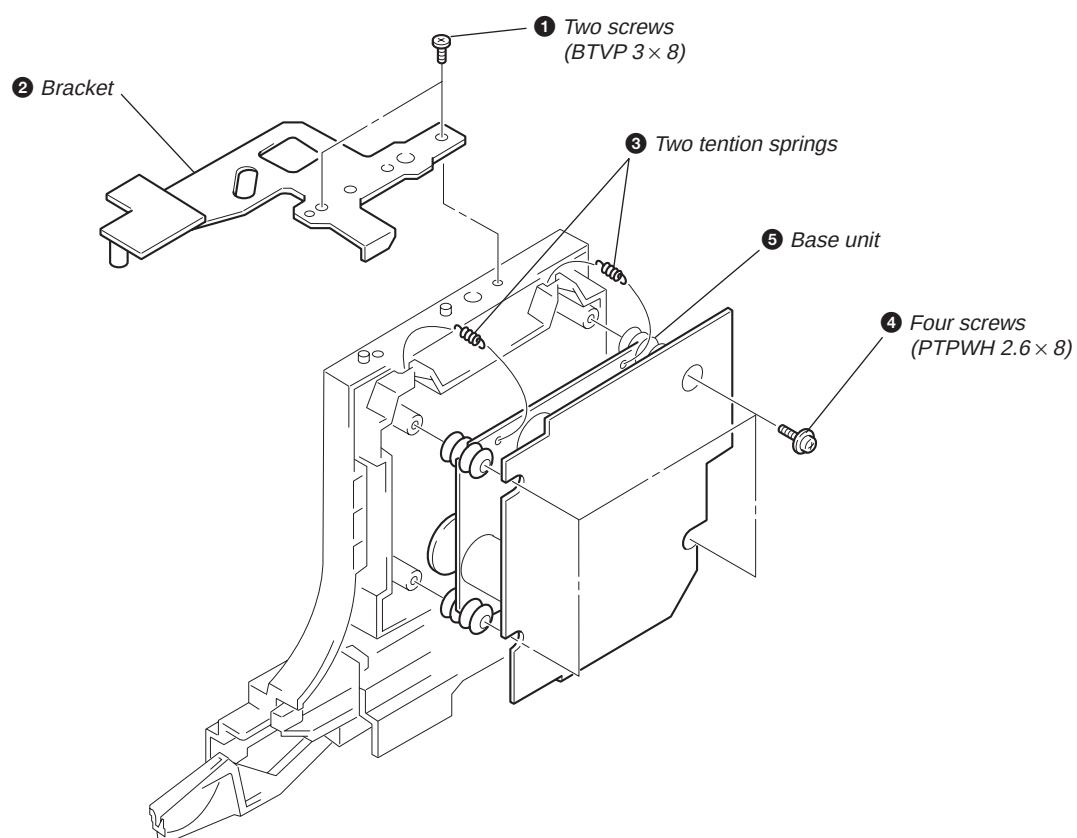
2-7. SUB CHASSIS



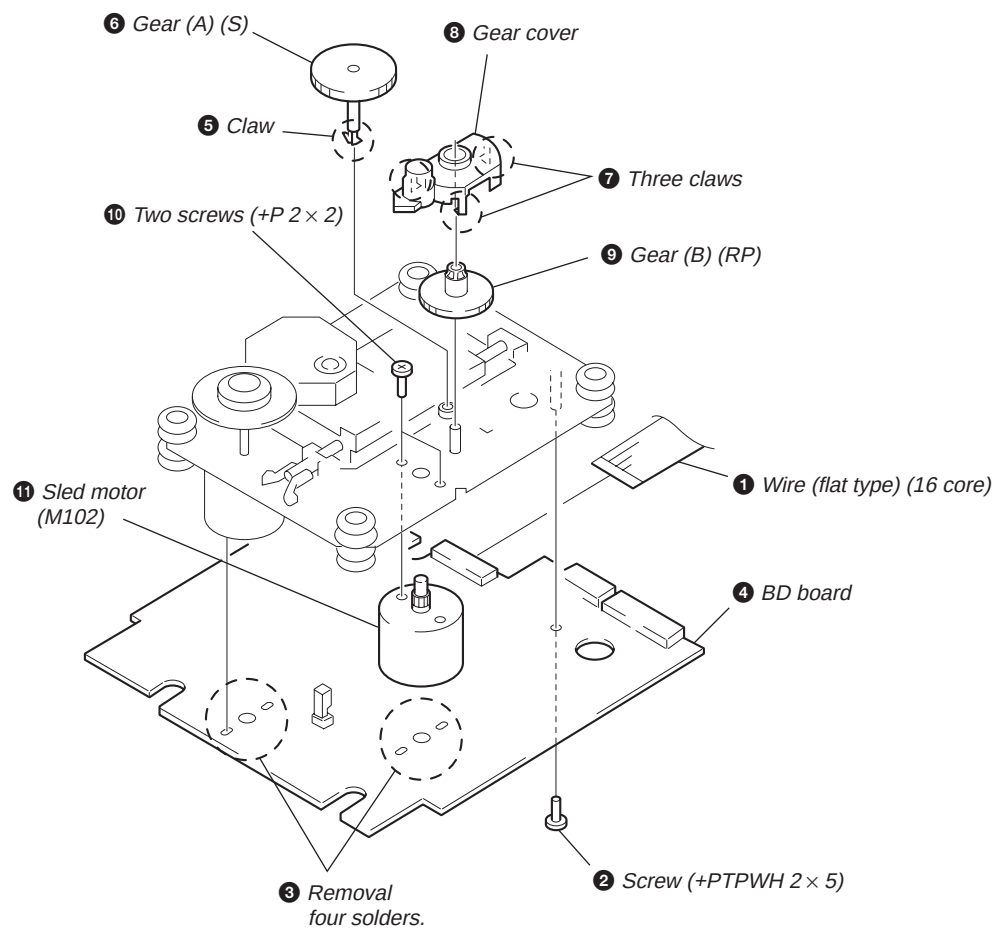
2-8. CD MECHANISM DECK SECTION



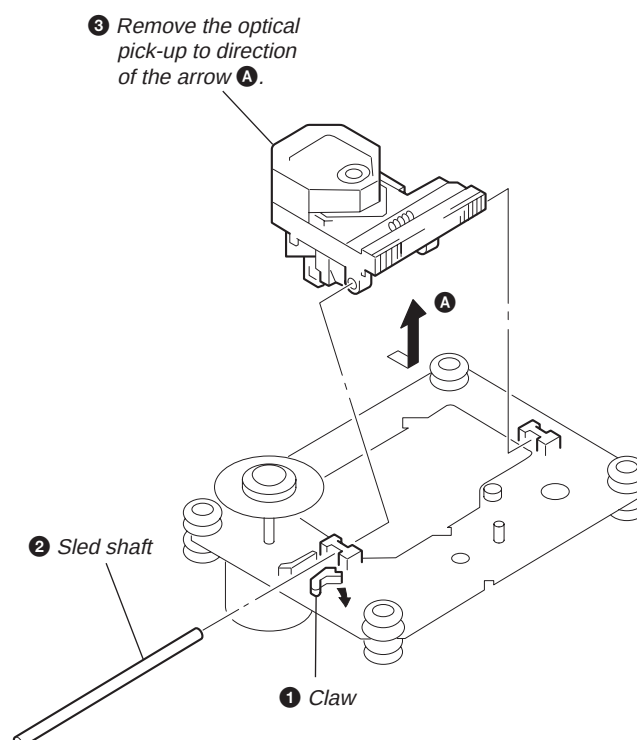
2-9. BASE UNIT



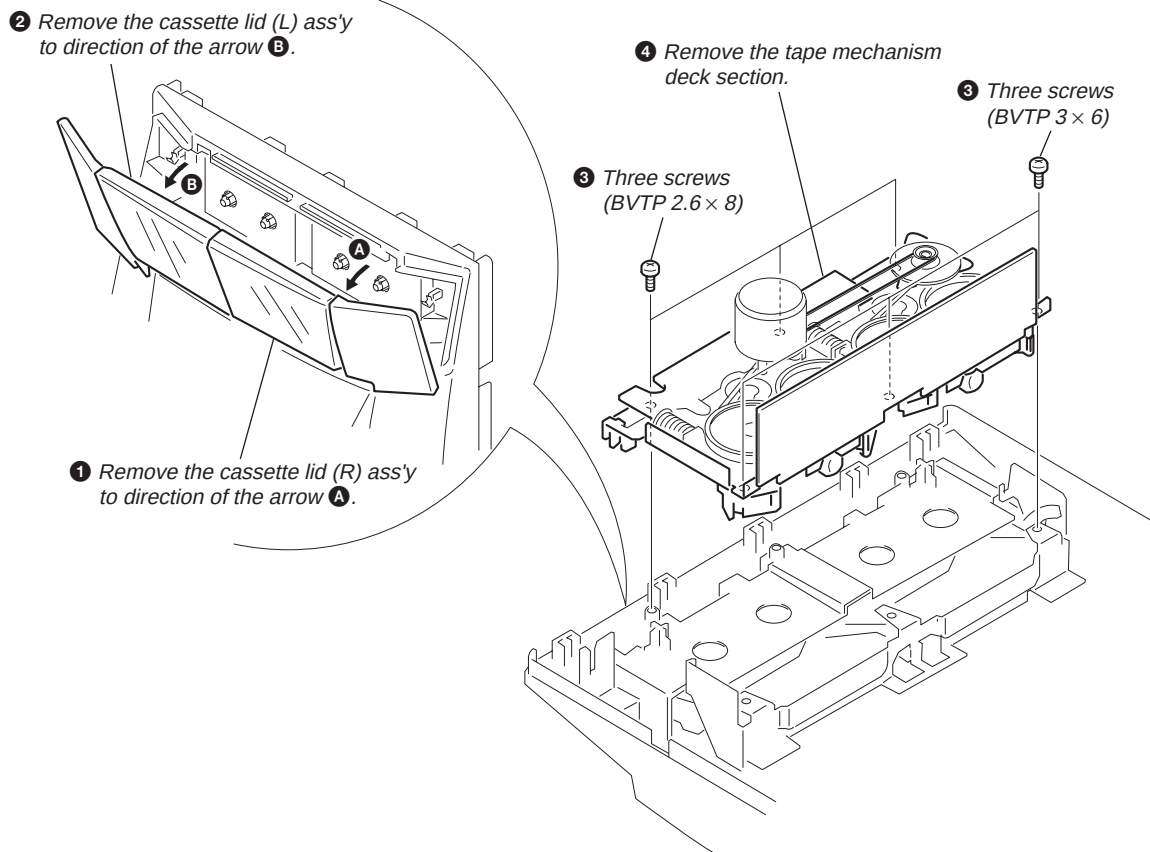
2-10. BD BOARD, SLED MOTOR (M102)



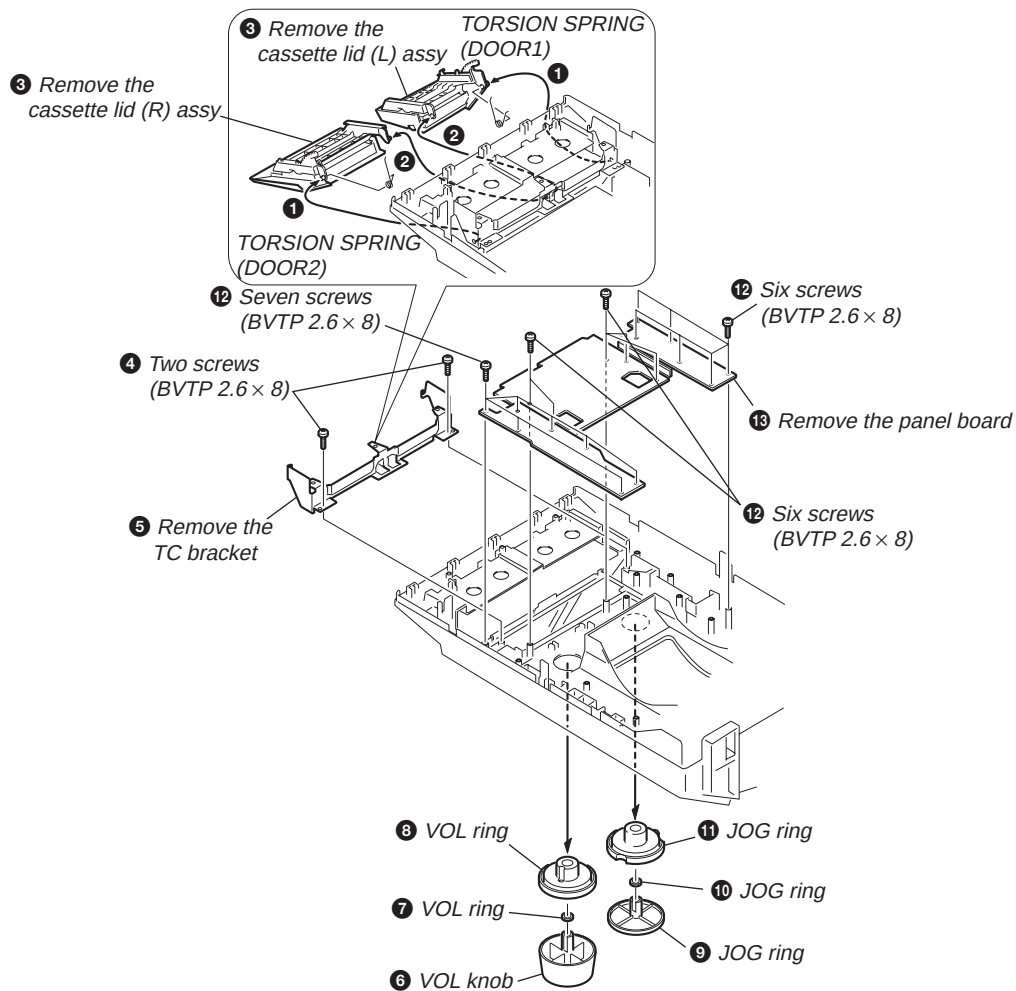
2-11. OPTICAL PICK-UP (KSS-213BA/F-NP)



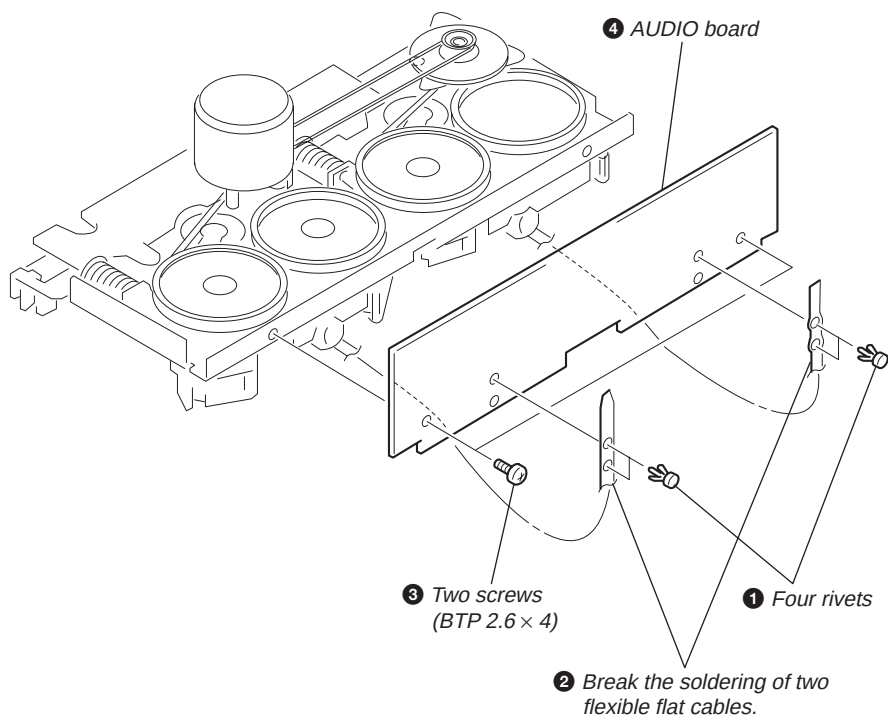
2-12. TAPE MECHANISM DECK SECTION



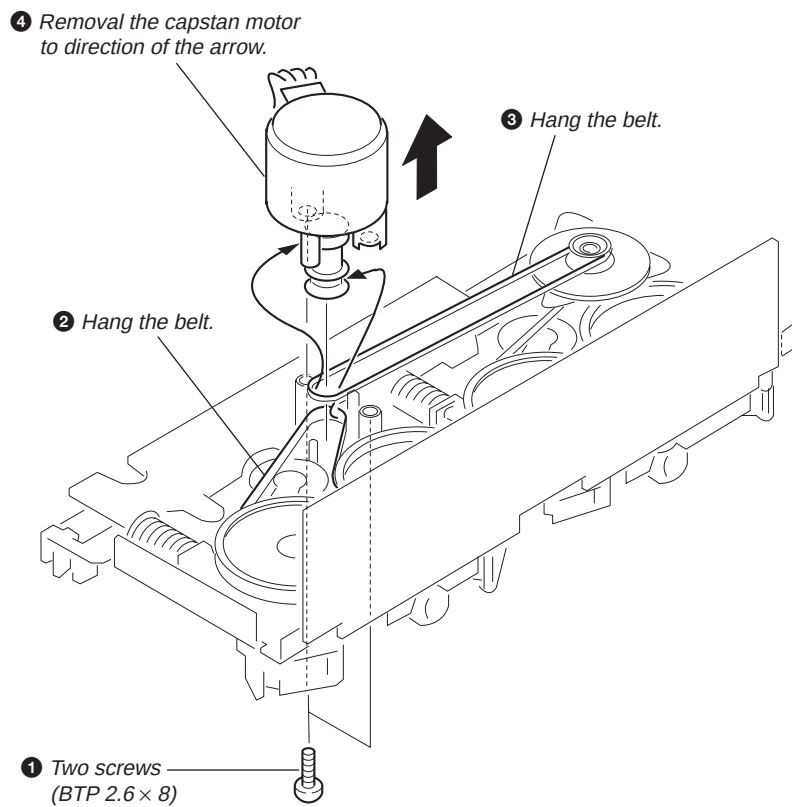
2-13. PANEL BOARD



2-14. AUDIO BOARD



2-15. CAPSTAN MOTOR (M1)



SECTION 3

TEST MODE

[MC Cold Reset]

- * The cold reset clears all data including preset data stored in the RAM to initial conditions. Execute this mode when returning the set to the customer.

Procedure:

1. Press the three buttons **STOP**, **ENTER** and **FUNCTION** at the same time.
2. The fluorescent indicator tube turns off for a moment and the RAM is reset to the initial conditions.

[MC Hot Reset]

- * This mode resets the set with the preset data kept stored in the memory. This hot reset mode is performed also when the power cord is plugged in and out.

Procedure:

1. Press the three buttons **STOP**, **ENTER** and **GROUP 1** at the same time.
2. The fluorescent indicator tube turns off for a moment and the RAM is reset to the initial conditions.

[CD Initial]

- * The CD INITIAL clears all of the CD related data. Execute this mode when returning the set to the customer.

Procedure:

1. Press the three buttons **STOP**, **ENTER** and **GROUP 4** at the same time.
2. The message "STANDBY" appears on the fluorescent indicator tube and the CD related data is reset to the initial conditions.

[CD Line Test]

- * The CD Line test displays the rotating time required for one rotation by rotating the disc tray.

Procedure:

1. Press the three buttons **STOP**, **ENTER** and **GROUP 5** at the same time. The CD PLAY LED and the CD PAUSE LED flash alternately and the disc tray starts rotation.
2. The message "xx << y.y" appears on the fluorescent indicator tube. The left numbers count up the discs starting from 1 to 51. The left numbers "y.y" indicate the rotating time required for one rotation by rotating the disc tray.
3. To exit the CD LINE test mode, execute the MC Hot Reset.

[CD Memo All Clear]

- * The mode clears all contents of the CD disc memo. Execute this mode when returning the set to the customer.

Procedure:

1. Press the two buttons **MEMO INPUT** and **FLASH** at the same time.
2. The message "ALL ERASE" appears on the fluorescent indicator tube and the CD disc memo is all cleared.

[GC Test Mode]

- * This mode checks microprocessor version number, keys, fluorescent tubes, LEDs and VACS (Variable Attenuation Control System).

Procedure:

1. Press the three buttons **STOP**, **ENTER** and **GROUP 2** at the same time. The HCD-MC1 enters the GC test mode, and all of the fluorescent tubes and LEDs turn on.
2. From this state, any one of the three modes GROUP 1, GROUP 2 and GROUP 3 can be selected. Go to step 3 to enter the GROUP 1 test mode. Go to step 5 to enter the GROUP 2 test mode. Go to step 11 to enter the GROUP 3 test mode.
3. [GROUP 1 test mode] From the state of step 2, press the **GROUP 1** button. Every pressing of the **GROUP 1** button advances the following check modes and displays in the given order. Model name display, destination display, MC version display, GC version display, DC version display, VC version display and CC version display.
4. To exit the GC test mode and to return to the STANDBY mode, press the **STOP**, **ENTER** and **GROUP 2** buttons again.
5. [GROUP 2 test mode] You can enter this mode directly from step 2. When you performed steps 3, perform steps 4, then 1 and 2 before starting the step 5.
[GROUP 2 test mode] From the GC test mode, press the **GROUP 2** button to enter the key check mode.
The display: K 1, J 0, V 0 appears.
6. The value after K indicates the number of times that the key is pressed. 1 is displayed because the **GROUP 2** button has already been pressed.
7. When other keys are pressed one after another, the key count increases up to 43. The keys which have already been pressed, are not counted.
8. The value after J indicates the number of clicks that the JOG dial is rotated. The clockwise rotation increases the count value. The counter-clockwise rotation decreases the count value.
9. The value after V also indicates amount of rotation of volume control. The clockwise rotation increases the count value. The counter-clockwise rotation decreases the count value.
10. To exit the GC test mode and to return to the STANDBY mode, press the **STOP**, **ENTER** and **GROUP 2** buttons again.
11. [GROUP 3 test mode] You can enter this mode directly from step 2. When you performed steps 3, perform steps 4, then 1 and 2 before starting the step 5.
[GROUP 3 test mode] From the GC test mode, press the **GROUP 3** button to enter the VACS attenuation check mode.
The display: VOL NORMAL appears.
12. To exit the GC test mode and to return to the STANDBY mode, press the **STOP**, **ENTER** and **GROUP 2** buttons again.

[MC Test Mode]

- * This mode checks operation of amplifier and cassette deck.

How to enter the MC test mode:

Press the three buttons of **STOP**, **ENTER** and **GROUP 3**. "EQ CHECK" display on the FL tube and the VOLUME display flash. In addition the LEDs of the JOG dial, FF and REW flash indicating the MC test mode.

Check procedure:

You can perform any of the following five steps. However, it is recommended to perform them in the following order because the skipped cannot be performed if the checks are not performed in the given order.

1. EQ Check Mode

The GEQ becomes maximum when the JOG dial is turned clockwise.

The GEQ becomes minimum when the JOG dial is turned counter-clockwise.

The GEQ comes to center when the **FILE SELECT** button is pressed.

2. VOLUME Check Mode

The maximum volume is set, and the VOLUME MAX display and the GEQ display are displayed for a moment regardless of the amount of volume rotation.

The minimum volume is set, and the VOLUME MIN display and the GEQ display are displayed for a moment regardless of the amount of volume rotation.

3. Deck Check Mode

Install a tape to the deck B. Select TAPE B with the **FUNCTION** button.

Recording starts and PAUSE is released when the REC button is pressed.

VIDEO is selected by the input FUNCTION.

Press the STOP button to stop recording and select TAPE B with the **FUNCTION** button.

Rewind the tape by pressing the **REW** button and stop at the recording start point. Start playback from the recording start point.

4. High Speed Check Mode-1

Install a tape to the deck A. Select TAPE A with the **FUNCTION** button.

Press the **PLAY** button then press the **HI-SPEED DUBBING** button during playback.

The normal playback is obtained during normal speed playback and the double speed playback is obtained during the double speed playback.

5. High Speed Check Mode-2

Install a tape to the deck B. Select TAPE B with the **FUNCTION** button.

Press the **REC** button. When the PAUSE is released, recording is started.

When the **HI-SPEED DUBBING** button is pressed during recording, the double speed recording is established only when the button is pressed.

[Aging Mode]

The decks A and B are operated automatically for aging purpose. When errors occur during aging, causes of errors are displayed and the aging mode is stopped.

How to enter the aging mode

1. Turn on the main power. Install a playback tape to deck A and install a blank tape to deck B.
2. Select TAPE A with the **FUNCTION** button.
3. Press the three buttons of **STOP**, **ENTER** and **GROUP ENTRY** at the same time to enter the aging mode.

How to exit the aging mode.

Turn off the main power.

1. Rewind the tapes A and B. Tapes stop at the shut-off of tape A and the aging mode advances to the next step.
The message: TAPE A AG-1 appears.
2. The tape A is played back in the FWD mode. After two minutes of the FWD playback, the aging mode advances to the next step.
The message: TAPE A AG-2 appears.
3. The tape A runs in fast forward. After two minutes of fast forward, or at the shut-off point, the tape is stopped and the aging mode advances to the next step.
The message: TAPE A AG-3 appears.
4. The tape A is played back in the RVS mode. After two minutes of the RVS playback, the aging mode advances to the next step.
The message: TAPE A AG-4 appears.

5. The tape A is rewound and stops at the shut-off. The aging mode advances to the next step.
The message: TAPE A AG-5 appears.
6. The tape B is played back in the FWD mode. After two minutes of the FWD playback, the aging mode advances to the next step.
The message: TAPE B AG-2 appears.
7. The tape B runs in fast forward. After two minutes of fast forward, or at the shut-off point, the tape is stopped and the aging mode advances to the next step.
The message: TAPE B AG-3 appears.
8. The tape B is played back in the RVS mode. After two minutes of the RVS playback, the aging mode advances to the next step.
The message: TAPE B AG-4 appears.
9. The tape B is rewound and stops at the shut-off. The aging mode advances to the next step.
The message: TAPE B AG-5 appears.

[Function Change Mode]

* Select either VIDEO or MD of the external FUNCTION input.

Procedure:

1. Turn off the power.
2. Press the two buttons **ENTER** and **POWER** at the same time. The main power is turned on and the other function of the previous function is selected and displayed. "MD" or "VIDEO"

[AM TUNER STEP 9 kHz/10 kHz Selection Mode]

* Either the 9 kHz step or 10 kHz step can be selected for the AM channel step.

Procedure:

1. Turn on the power and select TUNER using the **FUNCTION** button.
2. Select AM with the **TUNER/BAND** button and turn off the power.
3. Press the two buttons **FUNCTION** and **POWER** at the same time. The main power is turned on and the other frequency step of the previous mode is selected and displayed. "AM 9k STEP" or "AM 10k STEP"

SECTION 4 MECHANICAL ADJUSTMENTS

• TAPE MECHANISM DECK SECTION

Precaution

1. Clean the following parts with a denatured alcohol-moistened swab:
 record/playback heads pinch rollers
 erase head rubber belts
 capstan idlers
2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

• Torque Measurement

Mode	Torque meter	Meter reading
FWD	CQ-102C	31 to 71 g • cm (0.43 – 0.98 oz • inch)
FWD back tension	CQ-102C	2 to 6 g • cm (0.02 – 0.08 oz • inch)
REV	CQ-102RC	31 to 71 g • cm (0.43 – 0.98 oz • inch)
REV back tension	CQ-102RC	2 to 6 g • cm (0.02 – 0.08 oz • inch)
FF/REW	CQ-201B	71 to 143 g • cm (0.98 – 1.99 oz • inch)
FWD tension	CQ-403A	100 g or more (3.53 oz or more)
REV tension	CQ-403R	100 g or more (3.53 oz or more)

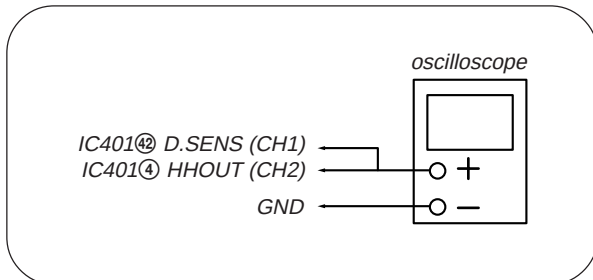
• CD MECHANISM DECK SECTION

To adjust the mechanism section, enter the mechanism section adjustment mode.

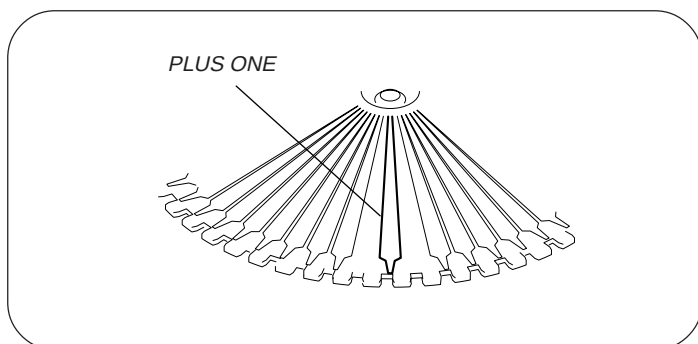
For how to enter the mechanism section adjustment mode, refer to each adjustment section.

DISC SENSOR ALIGNMENT

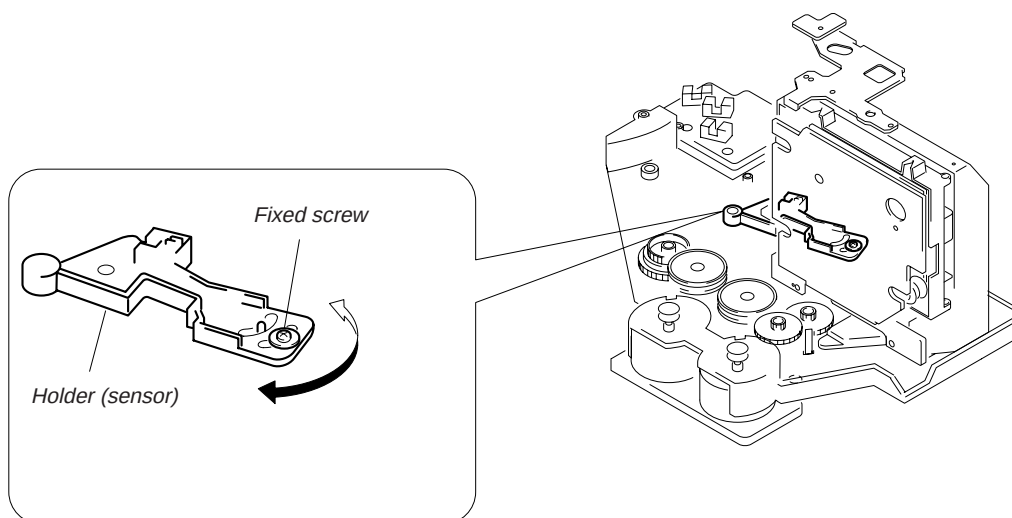
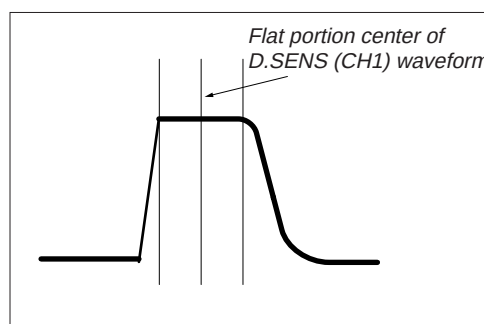
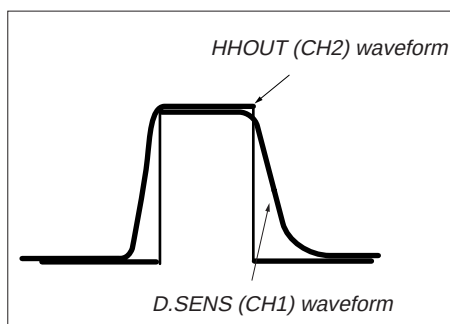
1. Make sure that there is no disc in the unit.
2. Connect an oscilloscope to IC401⁽⁴²⁾, IC402⁽⁴⁾ of the MAIN board.



3. Turn the power switch on.
4. Press the **■** button, **ENTER** button and **GROUP 5** button simultaneously.



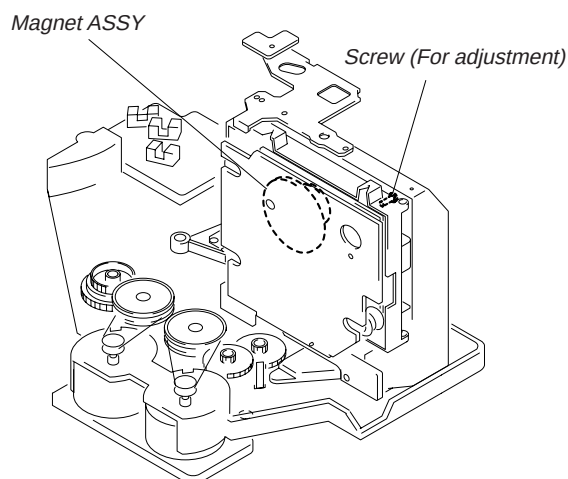
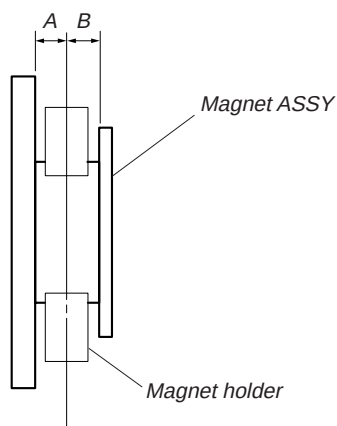
5. The disc table rotates in the clockwise direction. The disc table rotation time is displayed with "PLUS ONE" slit as a measuring point.
6. Measure the waveform of the oscilloscope when the disc table is rotating.
7. Move the holder (sensor) center so that the flat portion center at the top of the D.SENS (CH1) input waveform and the "H" center of HHOUT (CH2) coincide.



8. Tighten the fixed screw to fix the disc table, then press the **CLEAR** button.
 9. The disc table rotates in the counterclockwise direction. Measure the waveform and make sure that the flat portion center at the top of the D.SENS (CH1) input waveform and the "H" center of HHOUT (CH2) coincide.
 10. If the adjustment is not successful, press the **CLEAR** button to rotate the disc table in the clockwise direction, and perform steps 6 to 9.
- Note:** During the adjustment mode, the rotational direction is switched each time the **CLEAR** button is pressed. Pressing the **CHECK** button enters the loading mode which will be described later. Pressing the **CLEAR** button rotates the disc table again.

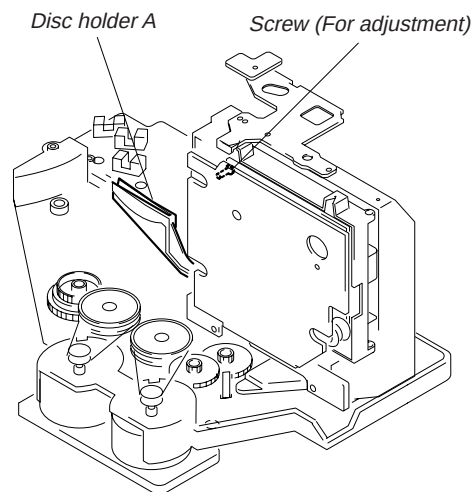
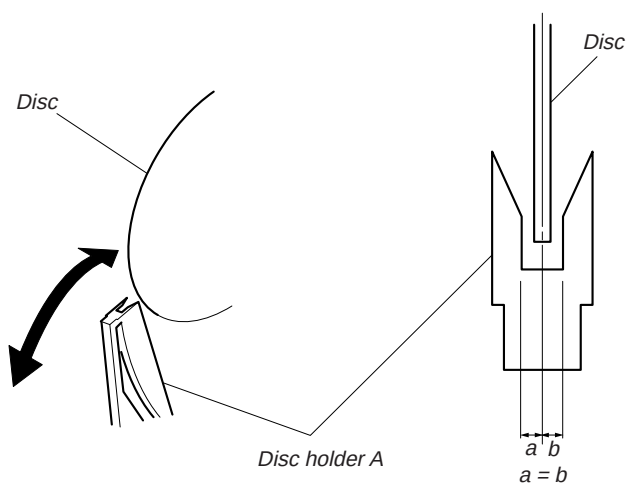
MAGNET ASSY ALIGNMENT

1. Check that there is no disc in the unit and then turn ON the power. Open the door, and set a disc in the PLUS ONE slit.
2. Close the door, and while pressing the  button, **ENTER** button and **GROUP 5** button simultaneously.
3. Press the **CHECK** button, and set the loading mode.
4. Press the  button and chuck the disc.
5. Adjust the magnet assembly and magnet holder so that $A=B$ as shown in the figure.



DISC HOLDER A ALIGNMENT

1. Check that there is no disc in the unit and then turn ON the power. Open the door, and set a disc in the PLUS ONE slit.
2. Close the door, and while pressing the  button, **ENTER** button and **GROUP 5** button simultaneously.
3. Press the **CHECK** button, and set the loading mode.
4. Press the  button and chuck the disc.
5. Press  or  button to stop the disc holder A slightly away from the disc.
6. Rotate and adjust the adjusting screw so that the center of the disc and that of the disc holder coincide.



SECTION 5 ELECTRICAL ADJUSTMENTS

DECK SECTION

0 dB=0.775 V

1. Demagnetize the record/playback head with a head demagnetizer.
2. Do not use a magnetized screwdriver for the adjustments.
3. After the adjustments, apply suitable locking compound to the parts adjust.
4. The adjustments should be performed with the rated power supply voltage unless otherwise noted.
5. The adjustments should be performed in the order given in this service manual. (As a general rule, playback circuit adjustment should be completed before performing recording circuit adjustment.)
6. The adjustments should be performed for both L-CH and R-CH.
7. Switches and controls should be set as follows unless otherwise specified.

• Test Tape

Tape	Signal	Used for
P-4-A100	10 kHz, -10 dB	Azimuth Adjustment
WS-48B	3 kHz, 0 dB	Tape Speed Adjustment
P-4-L300	315 Hz, 0 dB	Level Adjustment

Record/Playback Head Azimuth Adjustment

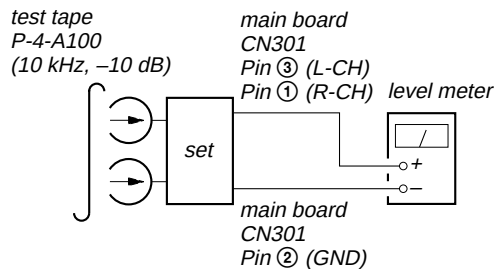
DECK A

DECK B

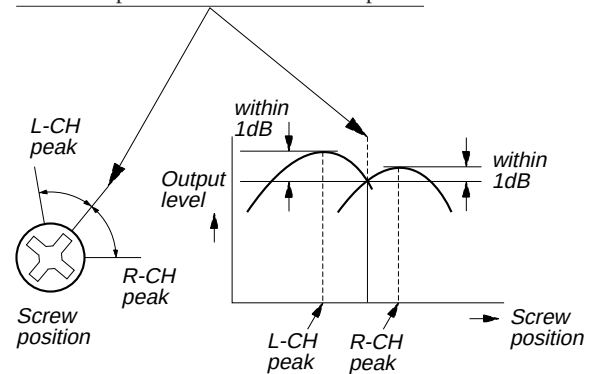
Note: Perform this adjustments for both decks

Procedure:

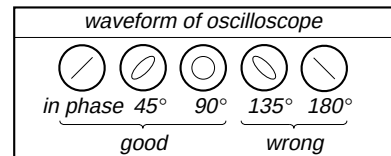
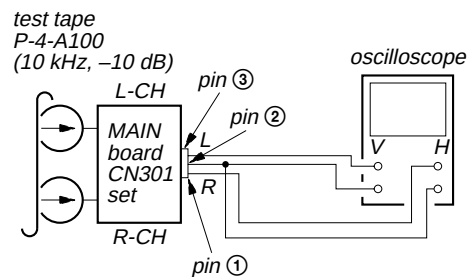
1. Mode: Playback



2. Turn the adjustment screw and check output peaks. If the peaks do not match for L-CH and R-CH, turn the adjustment screw so that outputs match within 1dB of peak.



3. Mode: Playback



4. After the adjustments, apply suitable locking compound to the parts adjusted.

Adjustment Location: Playback Head (Deck A).

Record/Playback/Erase Head (Deck B).

Tape Speed Adjustment **DECK B**

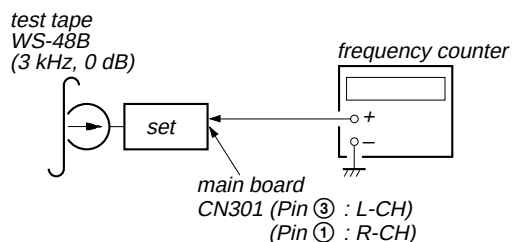
Note: Start the Tape Speed adjustment as below after setting to the test mode.

In the test mode, the tape speed is high during pressing the **HI-SPEED DUBBING** button.

Procedure:

1. Turn the power switch on.
2. Press the **■** button, **ENTER** button and **GROUP 3** button simultaneously.
(The "VOLUME" on the fluorescent indicator tube will blink while in the test mode.)
To exit from the test mode, press the **⏻** button.

Mode: Playback



1. Insert the WS-48B into the deck B.
2. Press the **▷** button on the deck B.
3. Press the **HI-SPEED DUBBING** button in playback mode.
Then at HIGH speed mode.
4. Adjust RV1001 on the LEAF SW board so that frequency counter reads $6,000 \pm 180$ Hz.
5. Press the **HI-SPEED DUBBING** button.
Then back to NORMAL speed mode.
6. Adjust RV1002 on the LEAF SW board so that frequency counter reads $3,000 \pm 90$ Hz.

Adjustment Location: LEAF SW board

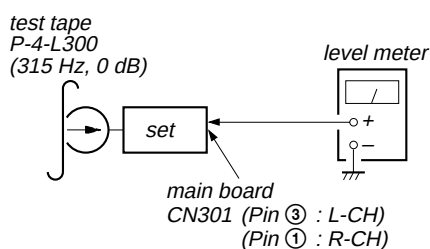
Sample Value of Wow and filter

W,RMS (JIS) within 0.3%
(test tape: WS-48B)

Playback level Adjustment **DECK A** **DECK B**

Procedure:

Mode: Playback



Deck A is RV311 (L-CH) and RV411 (R-CH), Deck B is RV301 (L-CH) and RV401 (R-CH) so that adjustment within adjustment level as follows.

Adjustment Level:

CN301 PB level: 301.5 to 338.3 mV (−8.2 to −7.2 dB) level difference between the channels: within ± 0.5 dB

Adjustment Location: AUDIO board

REC Bias Adjustment **DECK B**

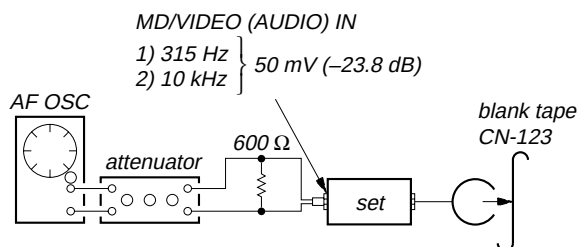
Procedure:

INTRODUCTION

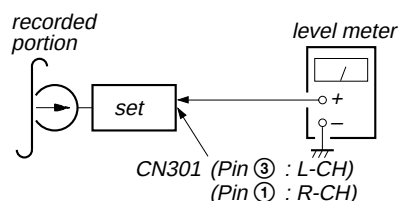
When set to the test mode performed in Tape Speed Adjustment, when the tape is rewound after recording, the "REC memory mode" which rewinds only the recorded portion and playback is set. This "REC memory mode" is convenient for performing this adjustment. During recording, the input signal FUNCTION will automatically switch to VIDEO.

(If do not operation of stopped from recording complete, after selecting DECK B with the **FUNCTION** button, and press **⏮⏮⏮** button then rewind to recording start position.)

1. Press **FUNCTION** button to select VIDEO. (This step is not necessary if the above test mode has already been set.)
2. Insert a tape into deck B.
3. After press **● REC** button, press **⏸ PAUSE** button, then recording start.
4. Mode: Record



5. Mode: Playback



6. Confirm playback the signal recorded in step 3 become adjustable level as follows.
If these levels do not adjustable level, adjustment the RV341 (L-CH) and RV441 (R-CH) on the AUDIO board to repeat steps 4 and 5.

Adjustable level: Playback output of 315 Hz to playback output of 10 kHz: ± 1.0 dB

Adjustment Location: AUDIO board

REC Level Adjustment **DECK B**

Procedure:

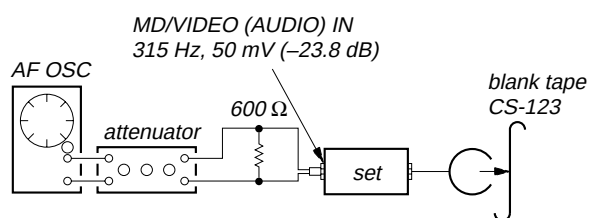
INTRODUCTION

When set to the test mode performed in Tape Speed Adjustment, when the tape is rewound after recording, the "REC memory mode" which rewinds only the recorded portion and playback is set. This "REC memory mode" is convenient for performing this adjustment. During recording, the input signal FUNCTION will automatically switch to VIDEO.

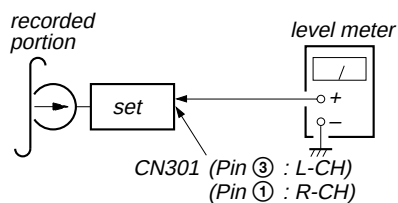
(If do not operation of stopped from recording complete, after selecting DECK B with the **FUNCTION** button, and press **⏮⏮⏮** button then rewind to recording start position.)

1. Press **FUNCTION** button to select VIDEO. (This step is not necessary if the above test mode has already been set.)
2. Insert a tape into deck B.
3. After press **● REC** button, press **⏸ PAUSE** button, then recording start.

4. Mode: Record



5. Mode: Playback



6. Confirm playback the signal recorded in step 3 become adjustable level as follows.

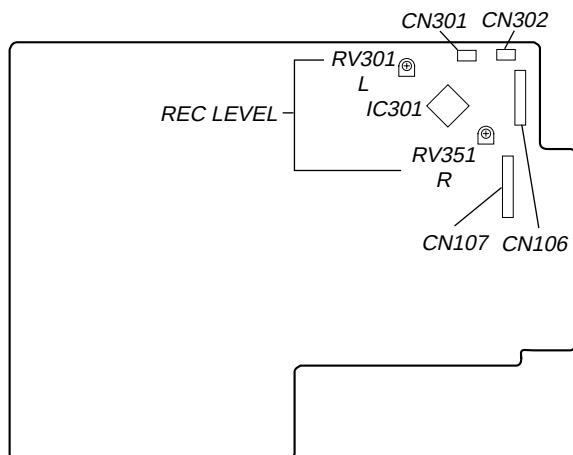
If these levels do not adjustable level, adjustment the RV301 (L-CH) and RV351 (R-CH) on the MAIN board to repeat steps 4 and 5.

Adjustable level:

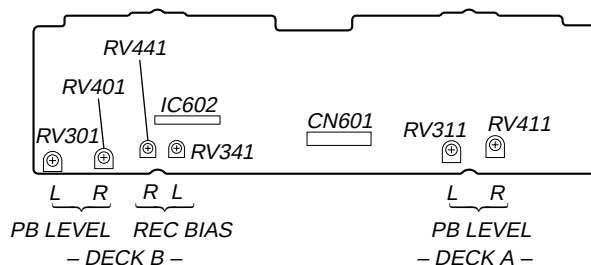
CN301 PB level: 47.2 to 53.0 mV (−24.3 to −23.3 dB)

Adjustment Location: MAIN board

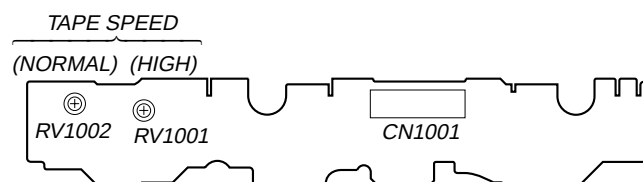
[MAIN BOARD] (Component Side)



[AUDIO BOARD] (Component Side)



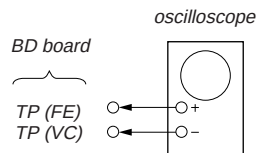
[LEAF SW BOARD] (Component Side)



CD SECTION

Note :

1. CD Block is basically designed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use an oscilloscope with more than $10M\Omega$ impedance.
4. Clean the object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

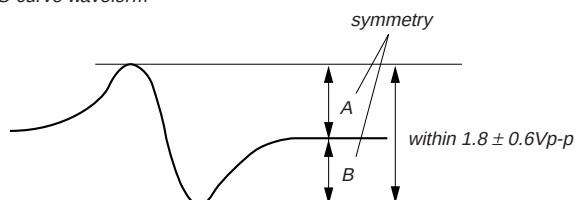


S Curve Check

Procedure :

1. Press the **I/⏻** button to turn ON the power .
2. Open the front cover, and press the **CD PLUS ONE** button.
3. Set the disc (YEDS-18) into the "PLUS ONE" slit.
4. Close the front cover, and chuck the disc.
5. Press the **I/⏻** button to turn OFF the power.
6. Connect the oscilloscope to TP (FE) of the BD board.
7. Connect TP (ADJ) of the MAIN board and connect TP (GND) with a lead wire.
8. Press the **I/⏻** button to turn ON the power.
9. The first track will be played back automatically. When the **CHECK** button is pressed, "S JI" will be displayed on the fluorescent indicator tube, and focus search will be repeated.
10. Check the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within 1.8 ± 0.6 Vp-p.

S-curve waveform

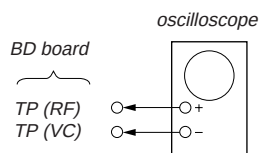


11. Turn OFF the power, and remove the lead wire connected at step 7.

Note :

- Try to measure several times to make sure than the ratio of A : B or B : A is more than 10 : 7.
- Take sweep time as long as possible and light up the brightness to obtain best waveform.

RF Level Check



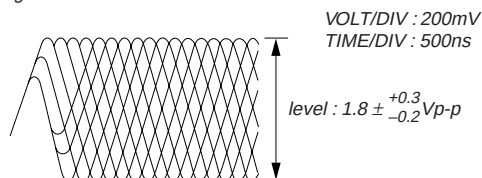
Procedure :

1. Press the **I/⏻** button to turn ON the power.
2. Open the front cover, and press the **CD PLUS ONE** button.
3. Set the disc (YEDS-18) into the "PLUS ONE" slit.
4. Close the front cover, and chuck the disc.
5. Press the **I/⏻** button to turn OFF the power.
6. Connect the oscilloscope to TP (RF) of the BD board.
7. Connect TP (ADJ) of the MAIN board and connect TP (GND) with a lead wire.
8. Press the **I/⏻** button to turn ON the power.
9. Playback the fifth track of the disc.

10. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.
11. Turn OFF the power, and remove the lead wire connected at step 7.

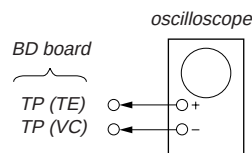
Note : A clear RF signal waveform means that the shape "◇" can be clearly distinguished at the center of the waveform.

RF signal waveform



E-F Balance (Traverse) Check

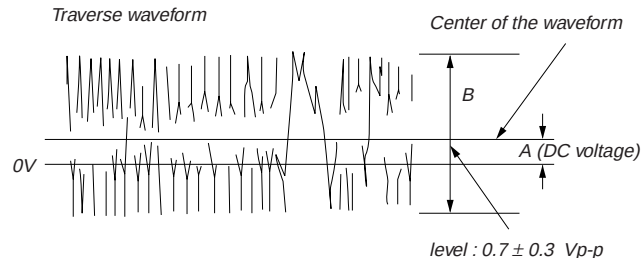
The procedure for this checking method differs for when a general remote control unit is used and not used.



When a general remote commander is used:

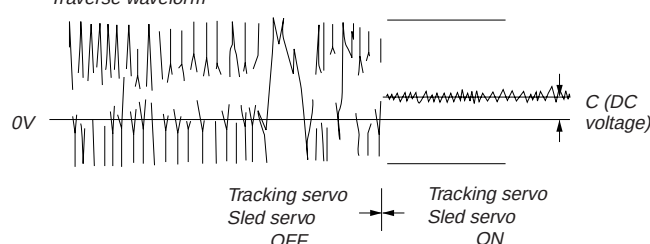
1. Press the **I/⏻** button to turn ON the power.
2. Open the front cover, and press the **CD PLUS ONE** button.
3. Set the disc (YEDS-18) into the "PLUS ONE" slit.
4. Close the front cover, and chuck the disc.
5. Press the **I/⏻** button to turn OFF the power.
6. Connect the oscilloscope to TP (TE) of the BD board.
7. Connect TP (ADJ) of the MAIN board and connect TP (GND) with a lead wire.
8. Press the **I/⏻** button to turn ON the power.
9. Playback the fifth track of the disc.
10. Press the **[3]** button on the remote commander. (The tracking servo and the sledding servo are turned OFF.)
11. Check the level B of the oscilloscope's waveform and the A (DC voltage) of the center of the Traverse waveform. Confirm the following :
 $A/B \times 100 = \text{less than } \pm 10\%$

Traverse waveform

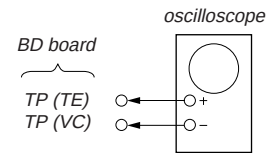


12. Press the **[8]** button on the remote control unit. (The tracking servo and sledding servo are turned ON.) Confirm the C (DC voltage) is almost equal to the A (DC voltage) is step 11.

Traverse waveform



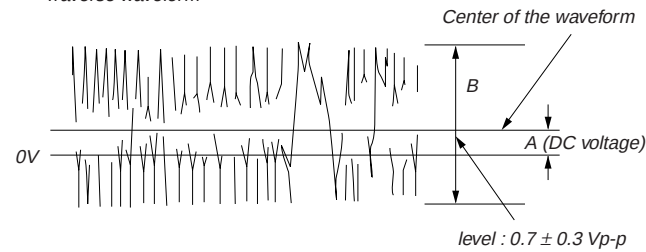
13. Turn OFF the power, and remove the lead wire connected at step 7.



When a general remote commander is not used:

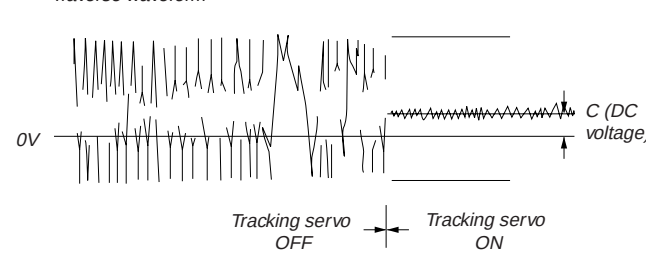
1. Solder lead wires to TP (DVDD) and TP (TOFF) on the BD board severally.
2. Connect the oscilloscope to TP (TE) of the BD board.
3. Press the **POWER** button to turn ON the power.
4. Open the front cover, and press the **CD PLUS ONE** button.
5. Set the disc (YEDS-18) into the "PLUS ONE" slit.
6. Close the front cover, and chuck the disc.
7. Playback the fifth track of the disc.
8. Short-circuit the lead wire connected at step 1. (The tracking servo is turned OFF)
9. Check the level B of the oscilloscope's waveform and the A (DC voltage) of the center of the Traverse waveform.
Confirm the following :
 $A/B \times 100 = \text{less than } \pm 10\%$

Traverse waveform



10. Disconnect the lead wire short-circuited at step 8. (The tracking servo is turned ON.) Confirm the C (DC voltage) is almost equal to the A (DC voltage) is step 8.

Traverse waveform

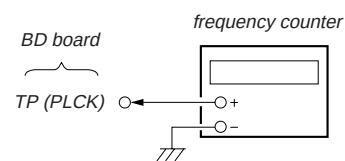


11. Turn OFF the power, and remove the lead wire connected at step 1.

RF PLL Free-run Frequency Check

Procedure :

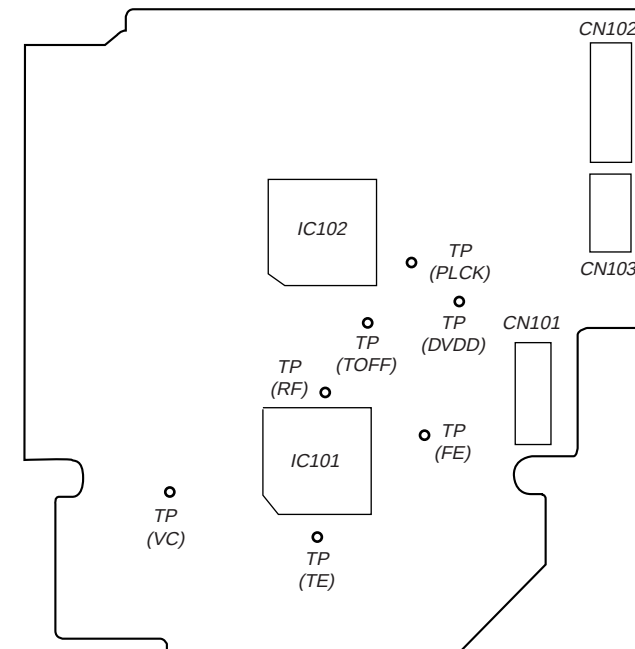
1. Connect the frequency counter to TP (PLCK) of the BD board.



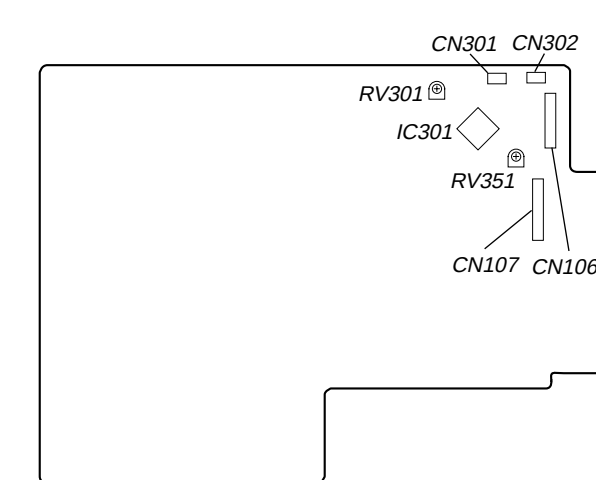
2. Press the **POWER** button to turn ON the power.
3. Open the front cover, and press the **CD PLUS ONE** button.
4. Set the disc (YEDS-18) into the "PLUS ONE" slit.
5. Close the front cover, and chuck the disc.
6. Playback the fifth track of the disc.
7. Confirm that reading on frequency counter is 4.3218 MHz $\pm$ 30 kHz.

Adjustment Location :

[BD BOARD] — CONDUCTOR SIDE —

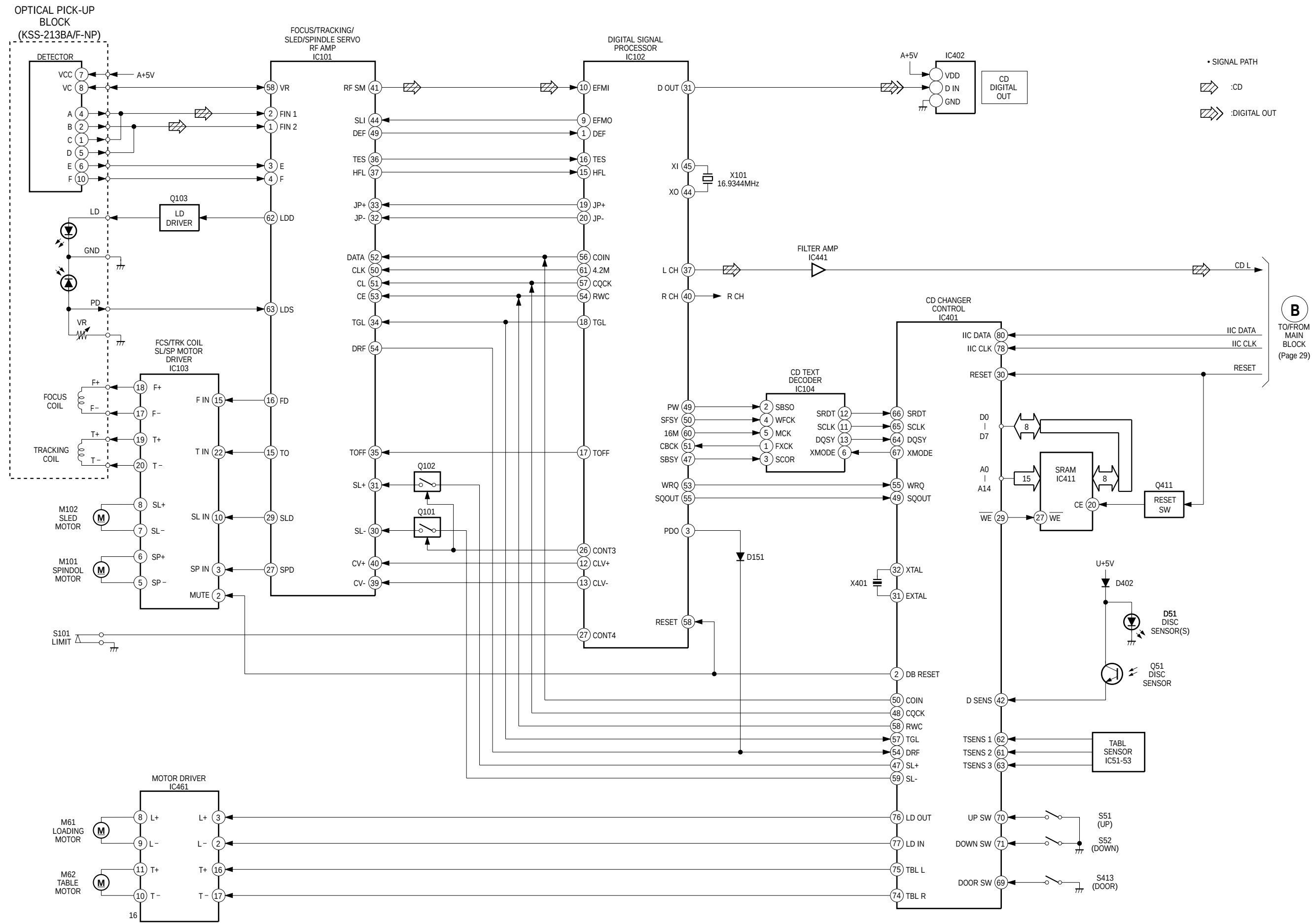


[MAIN BOARD] — COMPONENT SIDE —

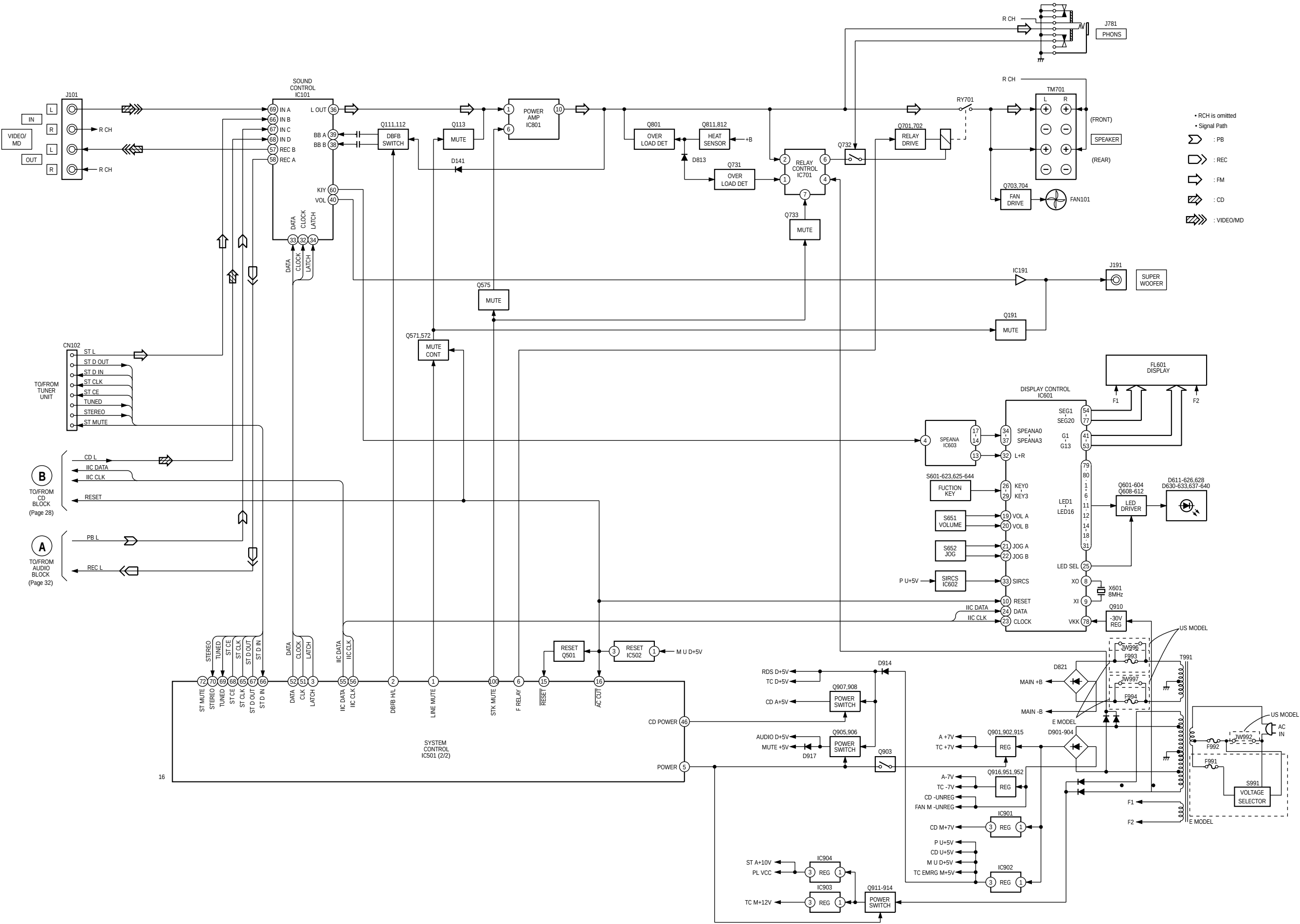


SECTION 6
DIAGRAMS

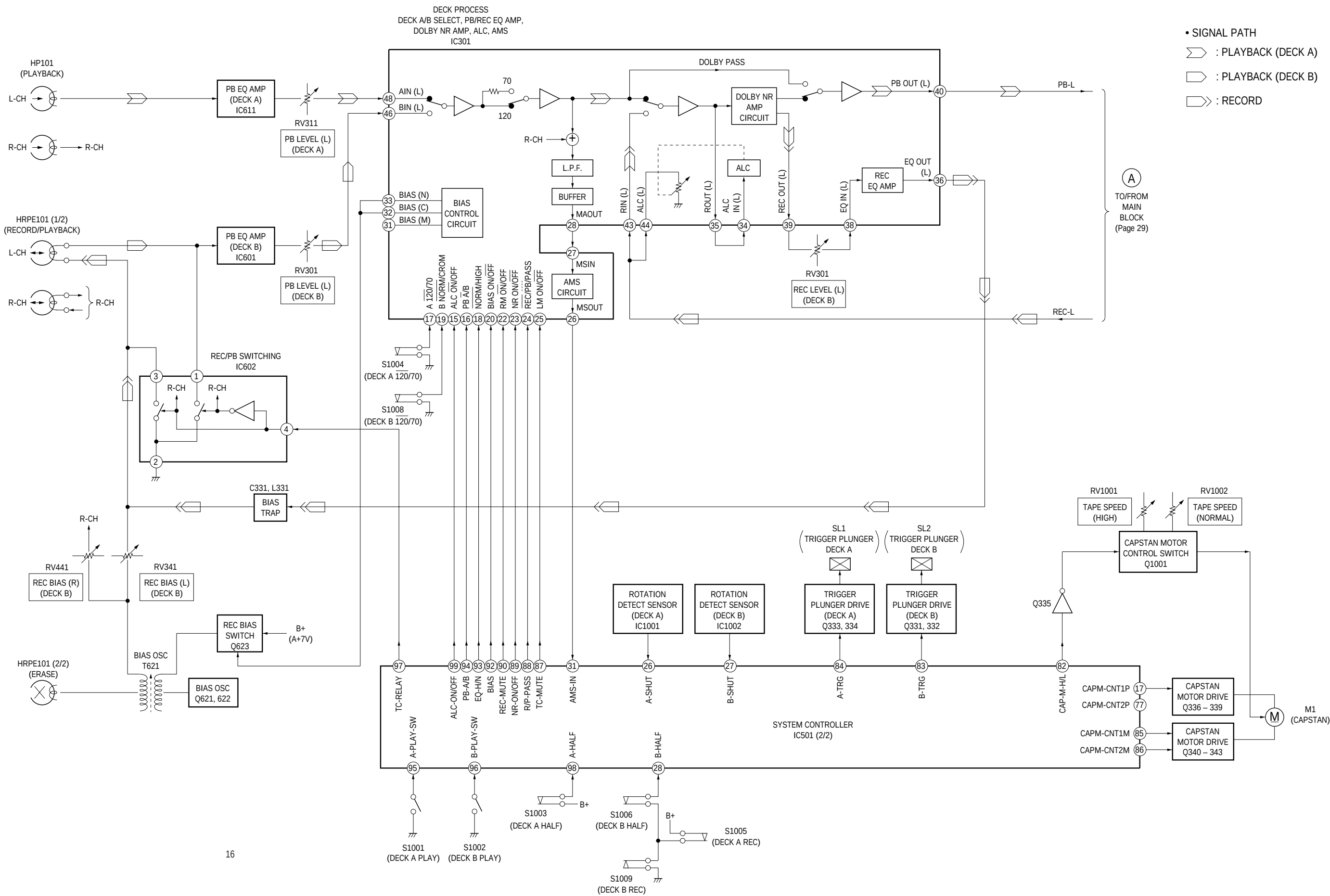
6-1. BLOCK DIAGRAMS
CD SECTION



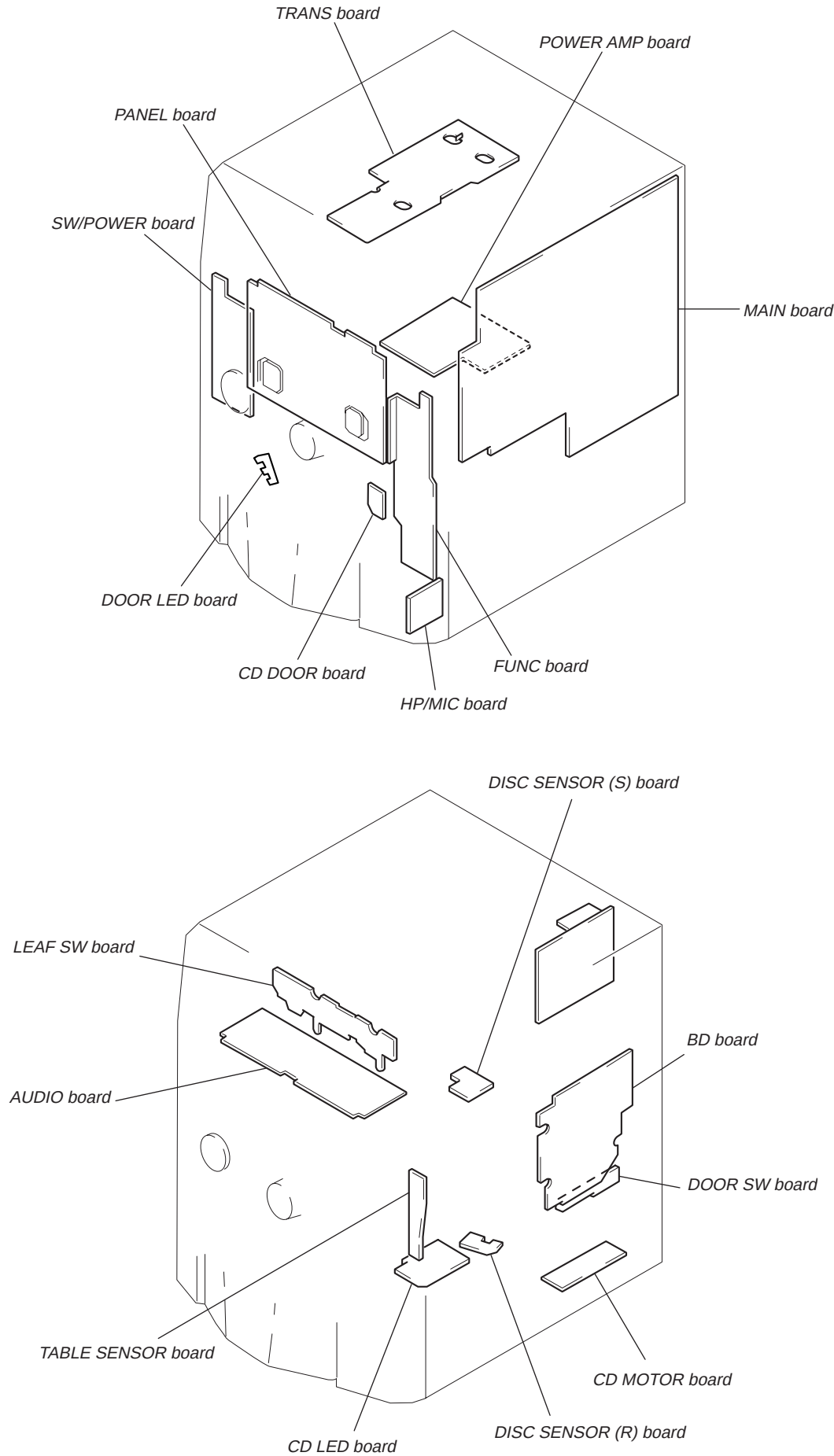
MAIN SECTION



AUDIO SECTION



6-2. CIRCUIT BOARD LOCATION



THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this necessary note is printed in each block.)

For schematic diagrams.

Note:

- All capacitors are in μF unless otherwise noted. pF: μF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
- % : indicates tolerance.
- Δ : internal component.
- : nonflammable resistor.
- : fusible resistor.
- : panel designation.

The components identified by mark Δ or dotted line with mark Δ are critical for safety.
Replace only with part number specified.

- : B+ Line.
- : B- Line.
- : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- Voltages are taken with a VOM (Input impedance 10 M Ω). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
- Circled numbers refer to waveforms.
- Signal path.
 - : FM
 - : VIDEO/MD
 - : PB (DECK A)
 - : PB (DECK B)
 - : REC (DECK B)
 - : CD
 - : CD DIGITAL
- Abbreviation
CND : Canadian

For printed wiring boards.

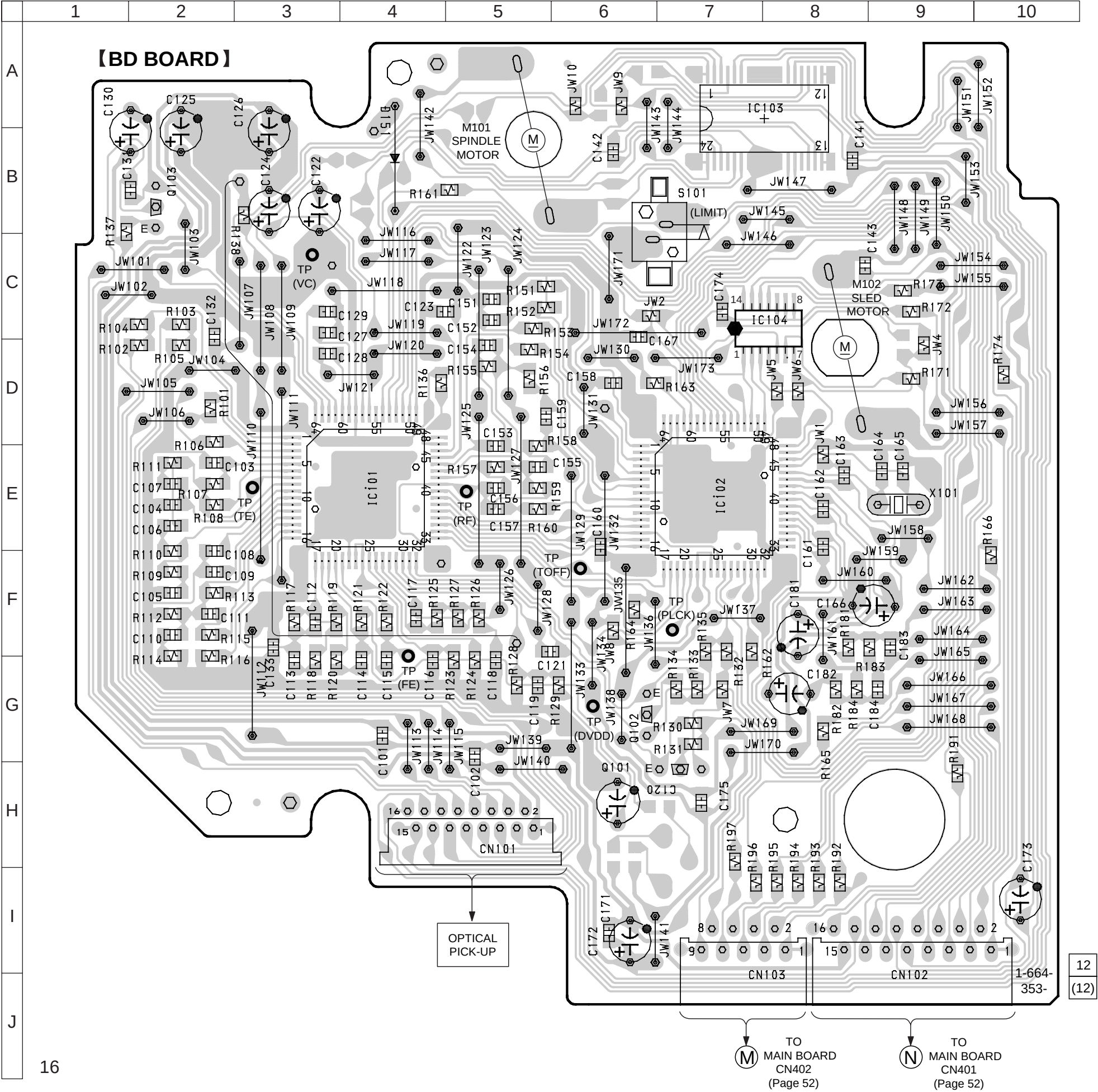
Note:

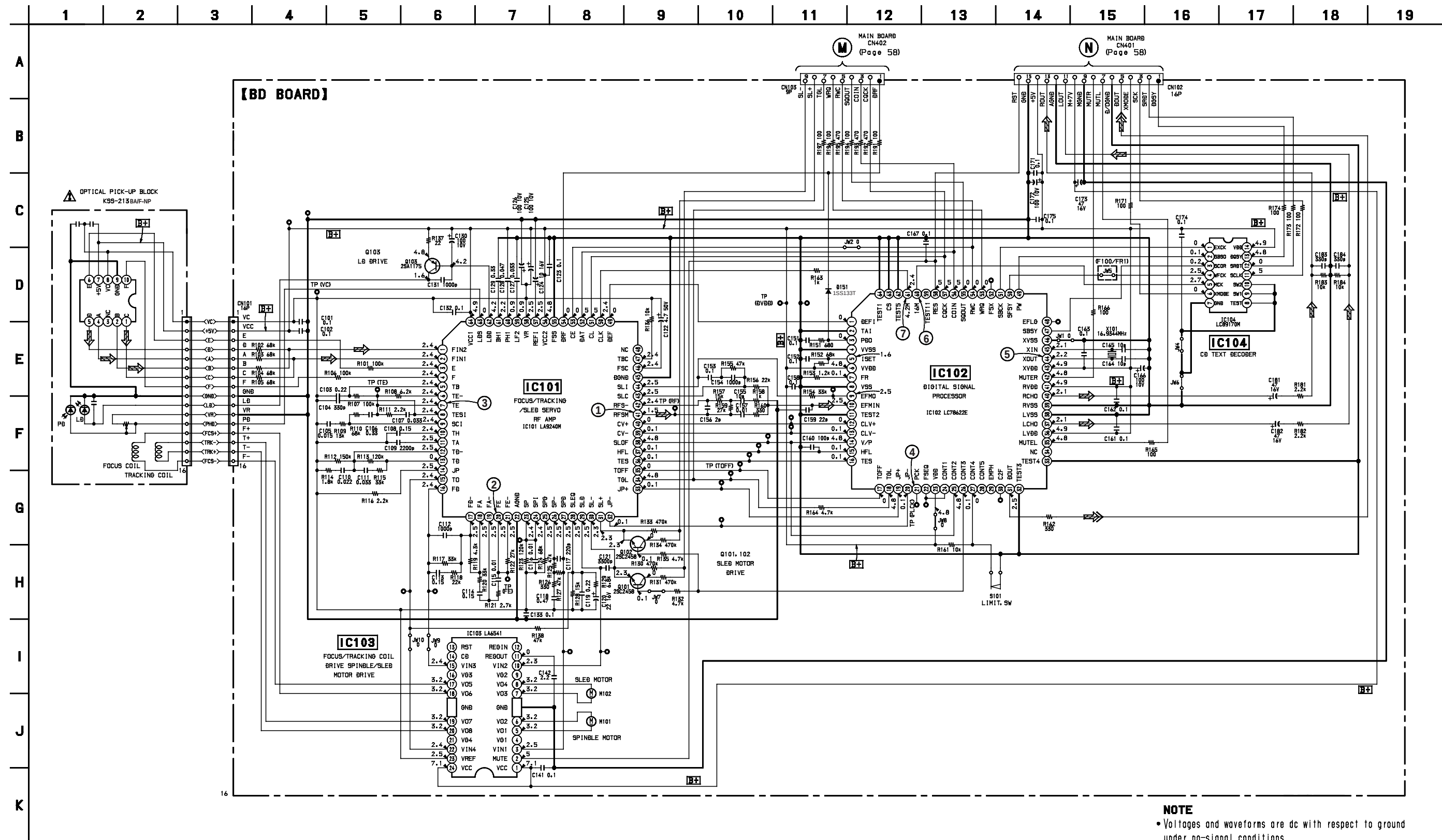
- : parts extracted from the component side.
- Δ : internal component.
- : Pattern from the side which enables seeing.

6-3. PRINTED WIRING BOARD BD SECTION • See page 33 for Circuit Boards Location.

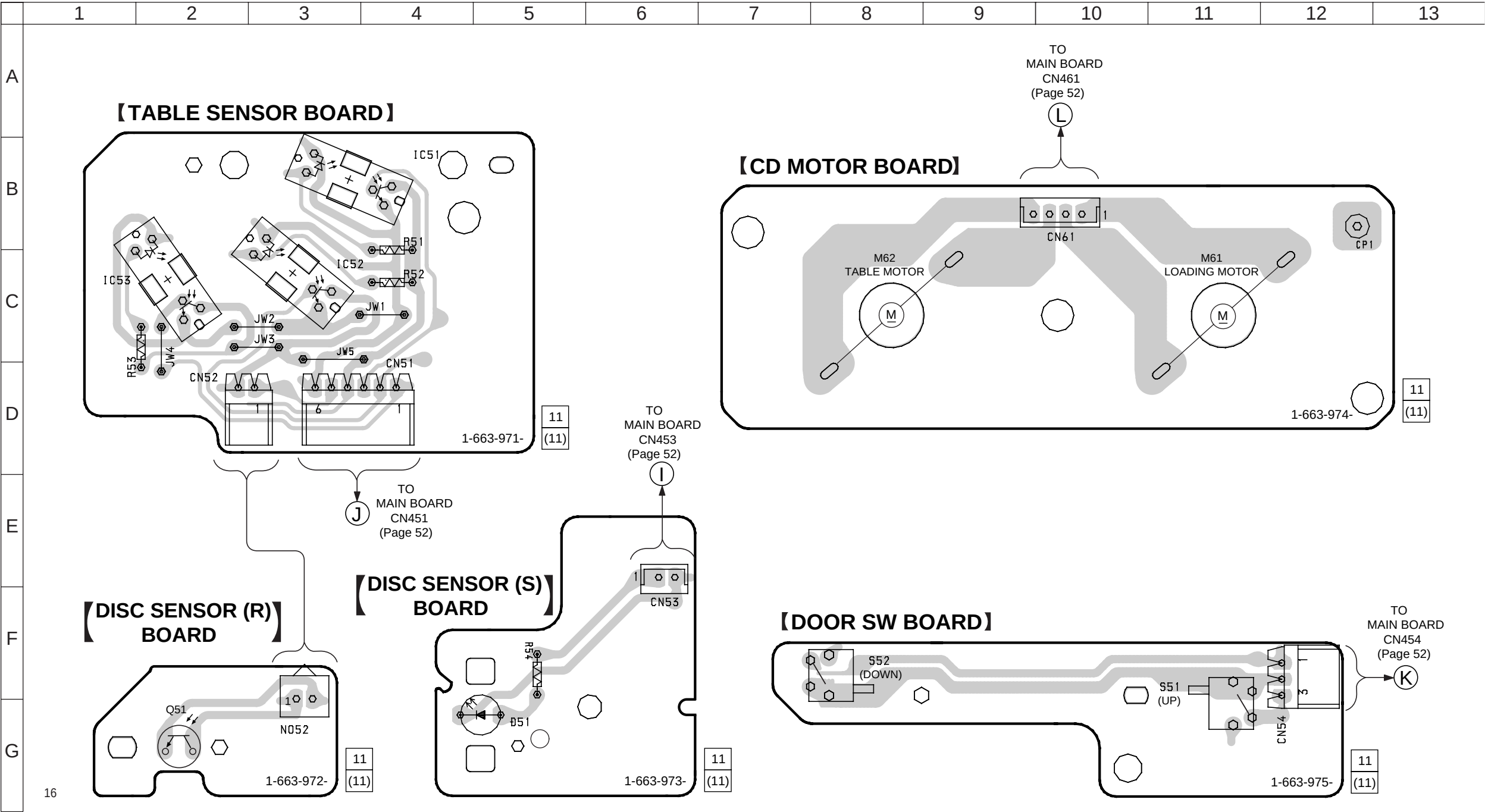
• Semiconductor Location

Ref. No.	Location
D151	B-4
IC101	E-4
IC102	E-7
IC103	B-8
IC104	C-8
Q101	H-6
Q102	G-6
Q103	B-2

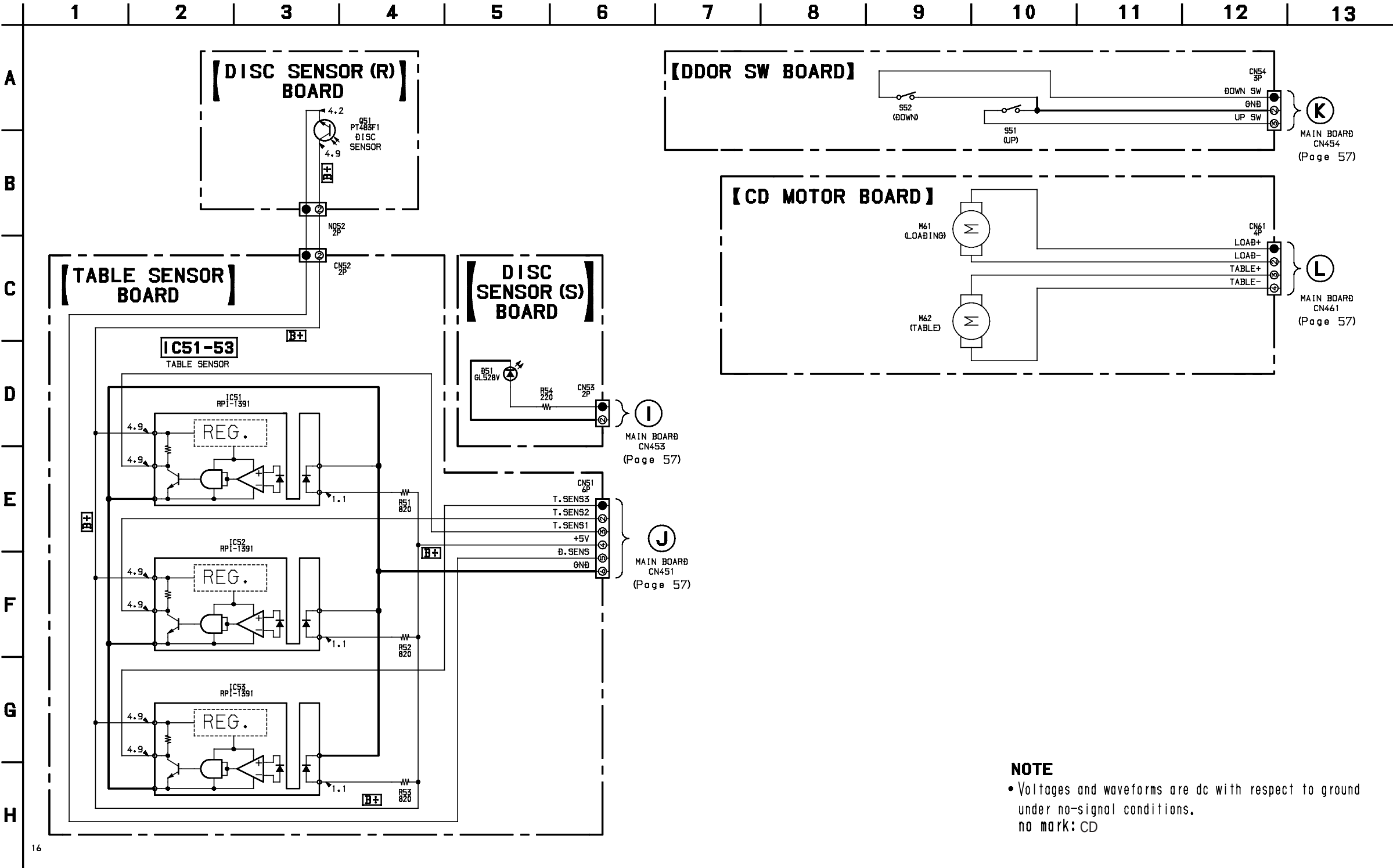


6-4. SCHEMATIC DIAGRAM BD SECTION • See page 71 for Waveforms. • See page 72 for IC Pin Functions.


6-5. PRINTED WIRING BOARD CD MOTOR SECTION • See Page 33 for Circuit Boards Location.



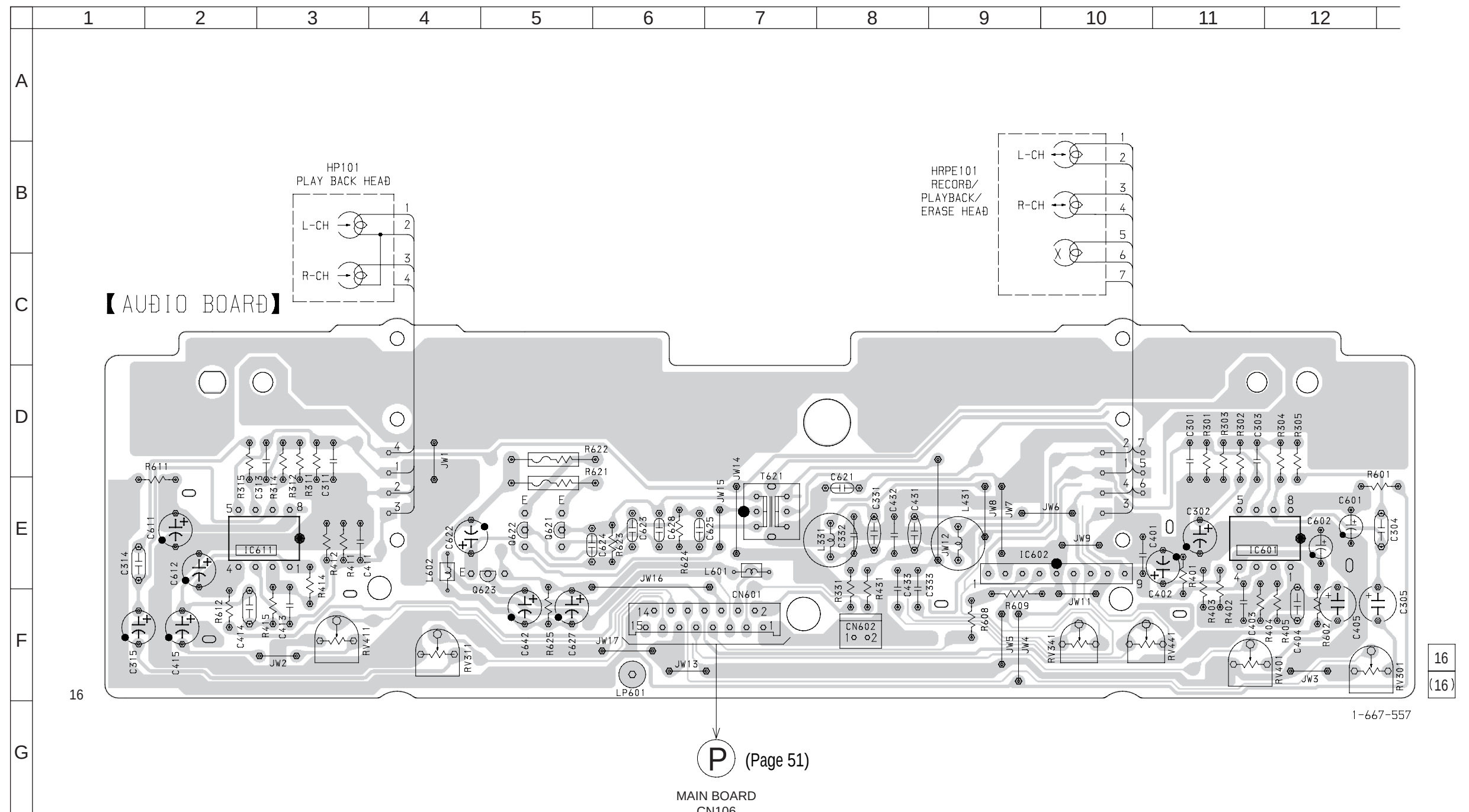
6-6. SCHEMATIC DIAGRAM CD MOTOR SECTION



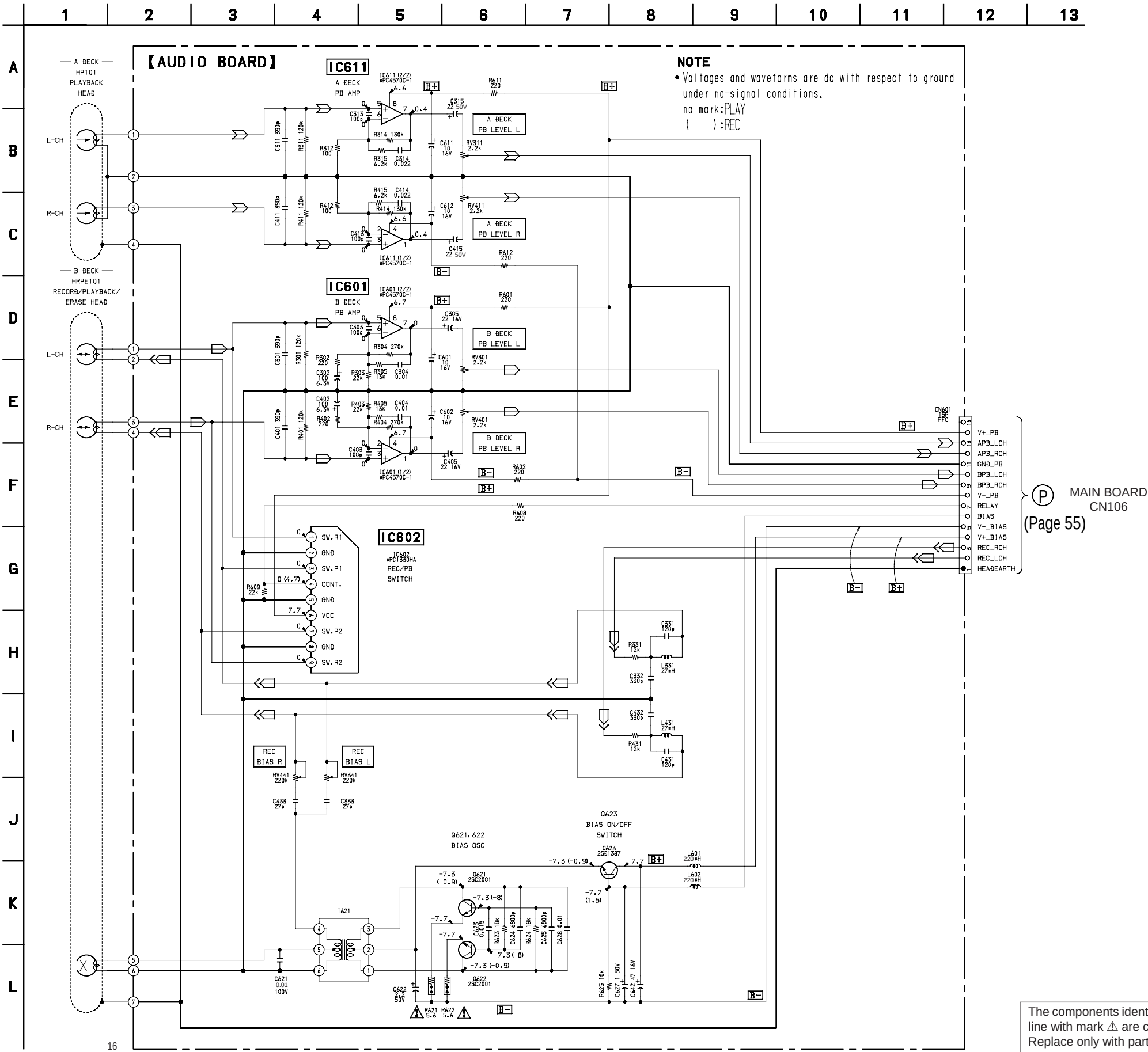
6-7. PRINTED WIRING BOARD AUDIO SECTION • See page 33 for Circuit Boards Location.

- **Semiconductor Location**

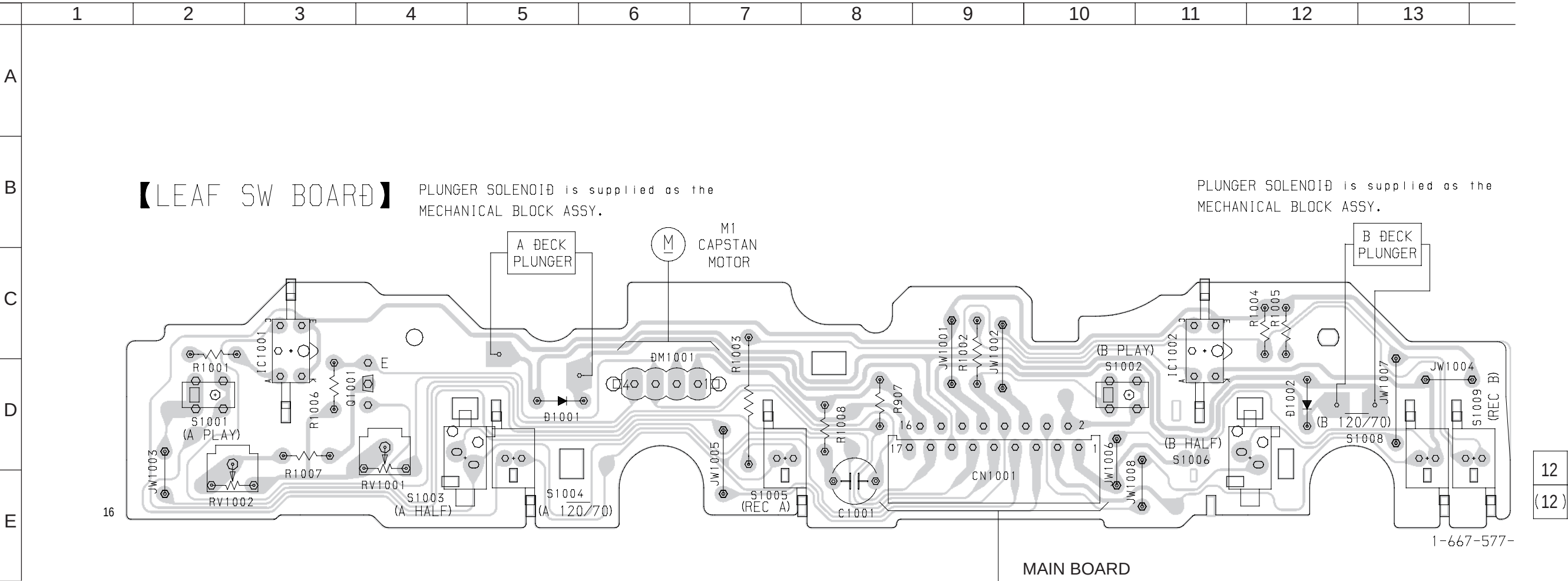
Ref. No.	Location
IC601	E-12
IC602	E-9
IC611	E-2
Q621	E-5
Q622	E-5
Q623	E-5



6-8. SCHEMATIC DIAGRAM AUDIO SECTION • See page 80 for IC Block Diagrams.



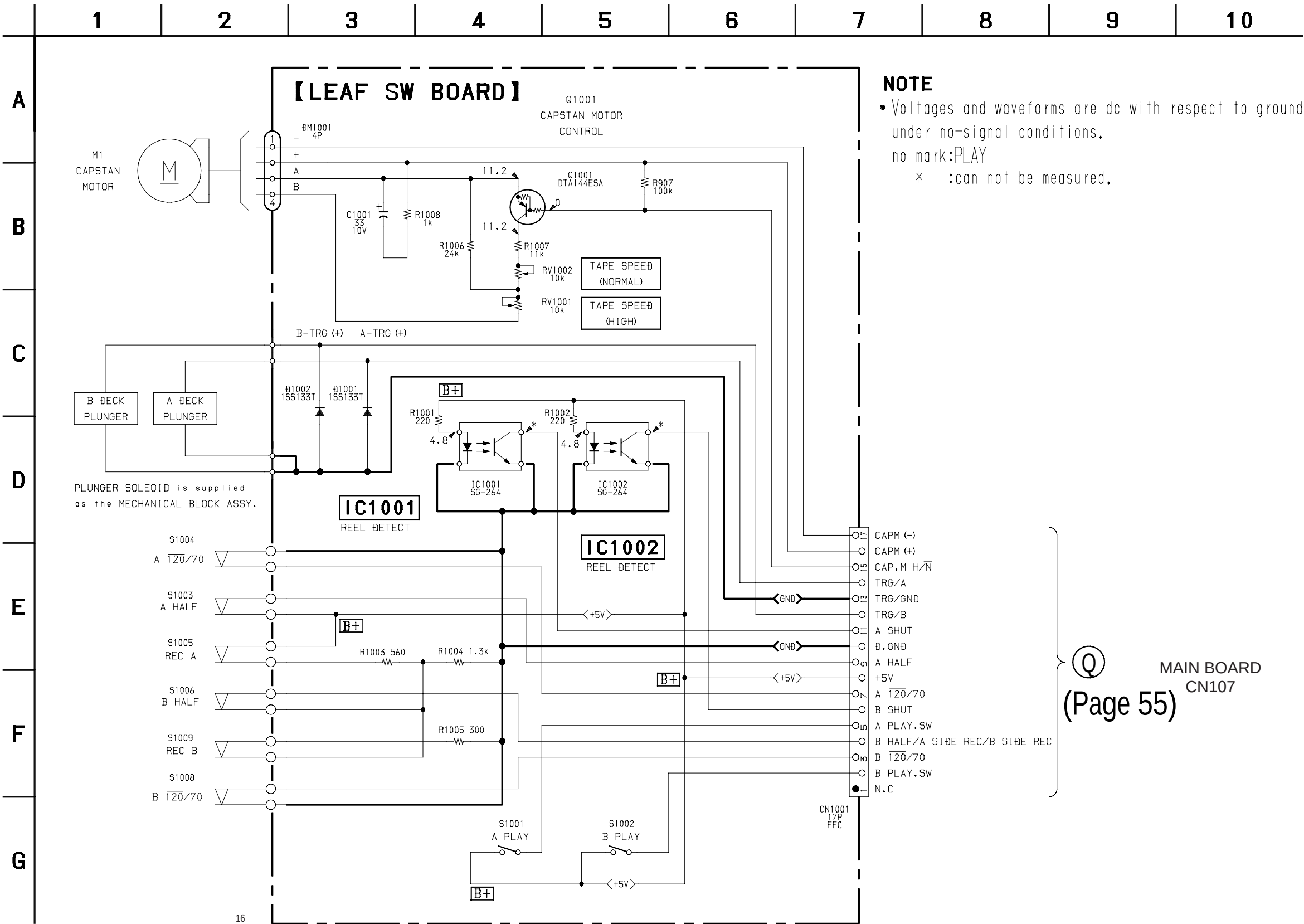
6-9. PRINTED WIRING BOARD LEAF SW SECTION • See page 33 for Circuit Boards Location.



• Semiconductor Location

Ref. No.	Location
D1001 D1002	D-5
IC1001 IC1002	C-3 C-11
Q1001	D-4

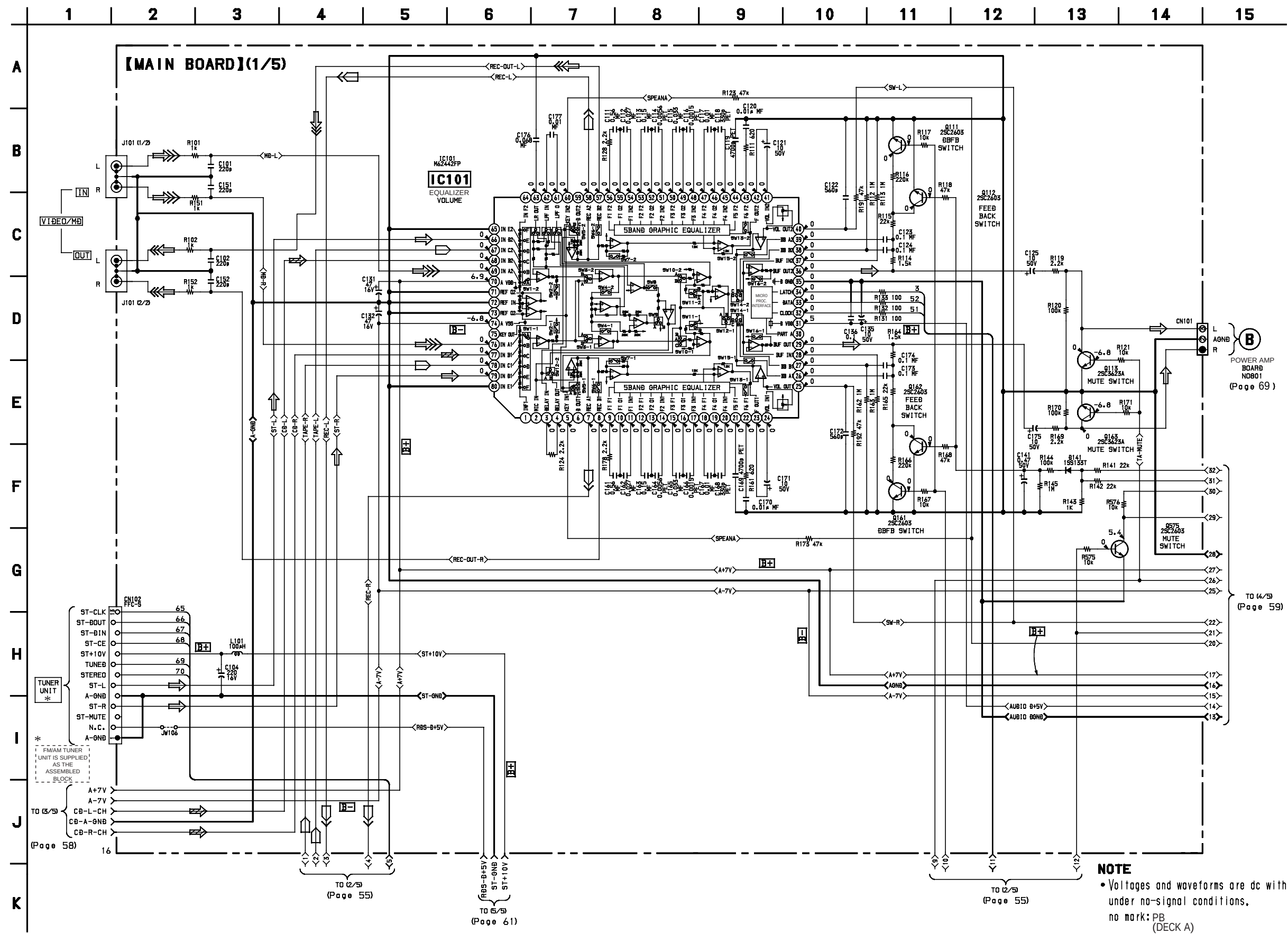
6-10. SCHEMATIC DIAGRAM LEAF SW SECTION



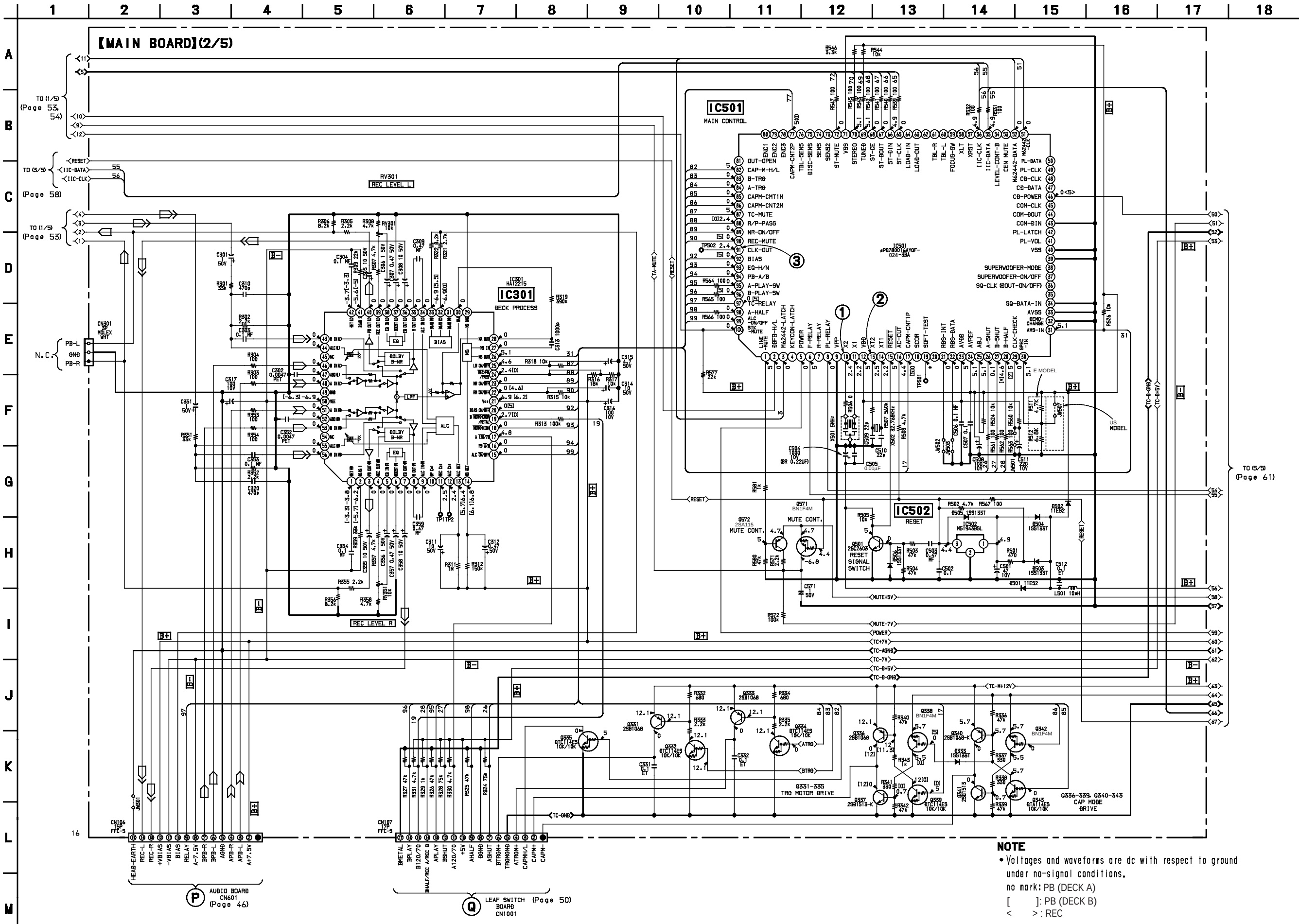
Ref. No.	Location
D141	C-10
D333	D-1
D401	I-10
D402	I-10
D411	I-10
D501	D-7
D502	D-7
D503	D-7
D504	D-7
D505	D-6
D506	D-6
D701	E-13
D702	F-11
D703	E-10
D704	E-11
D705	E-13
D712	G-11
D731	H-10
D732	H-2
D733	H-5
D751	E-11
D901	H-4
D902	H-4
D903	H-5
D904	H-5
D905	F-6
D906	F-7
D907	H-6
D908	H-6
D909	H-4
D910	H-3
D911	H-2
D912	H-2
D913	G-4
D914	F-3
D917	F-3
IC101	B-11
IC191	D-13
IC301	C-4
IC401	I-11
IC402	E-13
IC411	I-12
IC441	G-8
IC461	J-13
IC501	B-6
IC502	D-6
IC701	H-10
IC901	H-7
IC902	G-4
IC903	F-2
IC904	E-8
Q111	C10
Q112	B-10
Q113	C-9
Q191	C-13
Q161	B-10
Q162	B-10
Q163	C-9
Q331	E-2
Q332	E-1
Q333	F-2
Q334	F-1
Q335	E-3
Q336	E-2
Q337	E-2
Q338	E-1
Q339	E-1
Q340	D-2
Q341	D-2
Q342	D-1
Q343	D-1
Q411	J-13
Q501	D-7
Q505	C-5
Q571	D-5
Q572	D-5
Q575	D-8
Q701	F-10
Q702	F-10
Q703	E-13
Q704	E-13
Q711	G-9
Q712	F-9
Q713	F-9
Q731	H-10
Q732	G-10
Q733	H-9
Q901	E-6
Q902	F-6
Q903	F-7
Q905	F-4
Q906	F-3
Q907	F-4
Q908	F-4
Q910	H-2
Q911	F-7
Q912	F-7
Q913	G-4
Q914	G-4
Q915	E-6
Q916	E-5
Q951	E-5
Q952	F-5



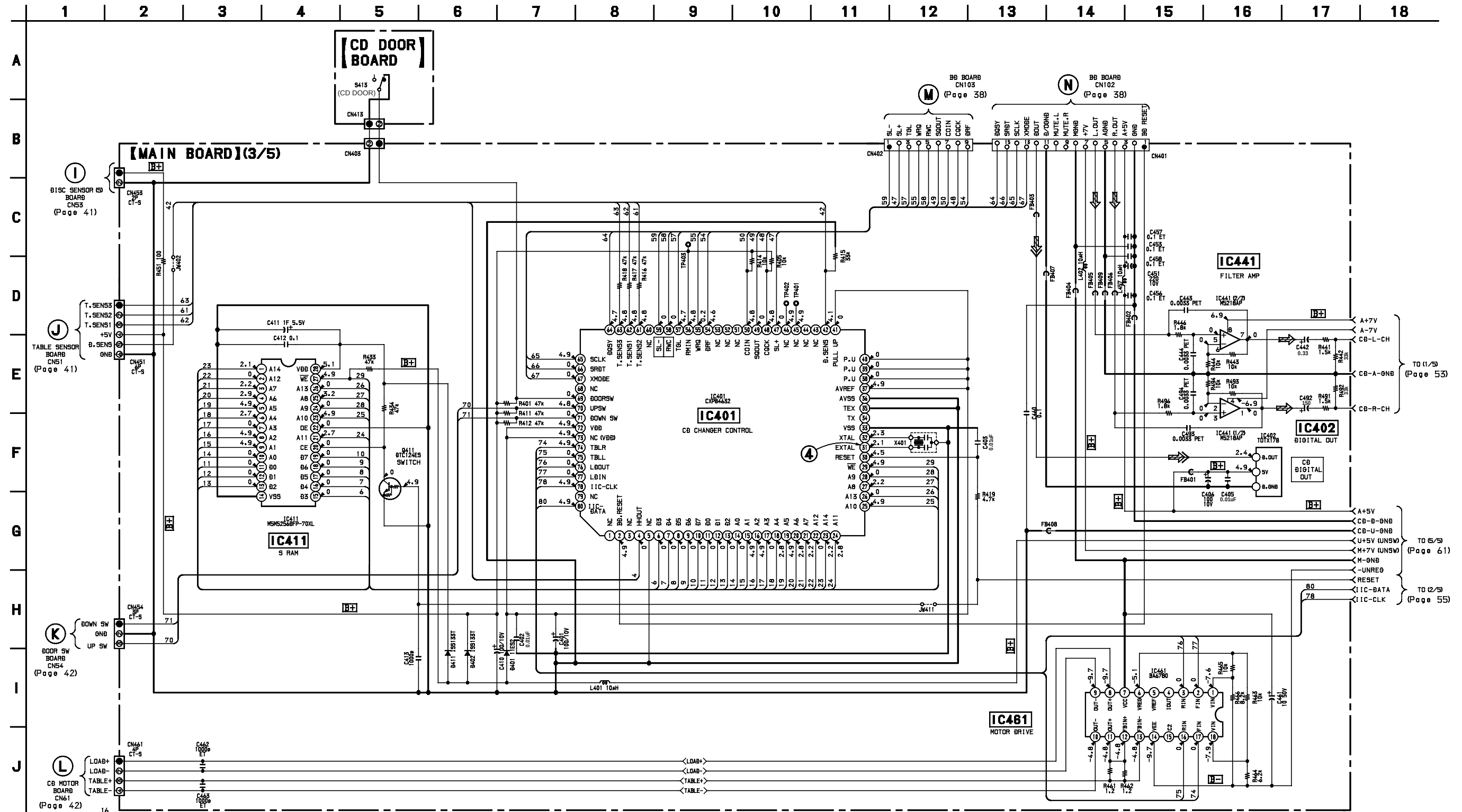
6-12. SCHEMATIC DIARGAM MAIN (1/5) SECTION



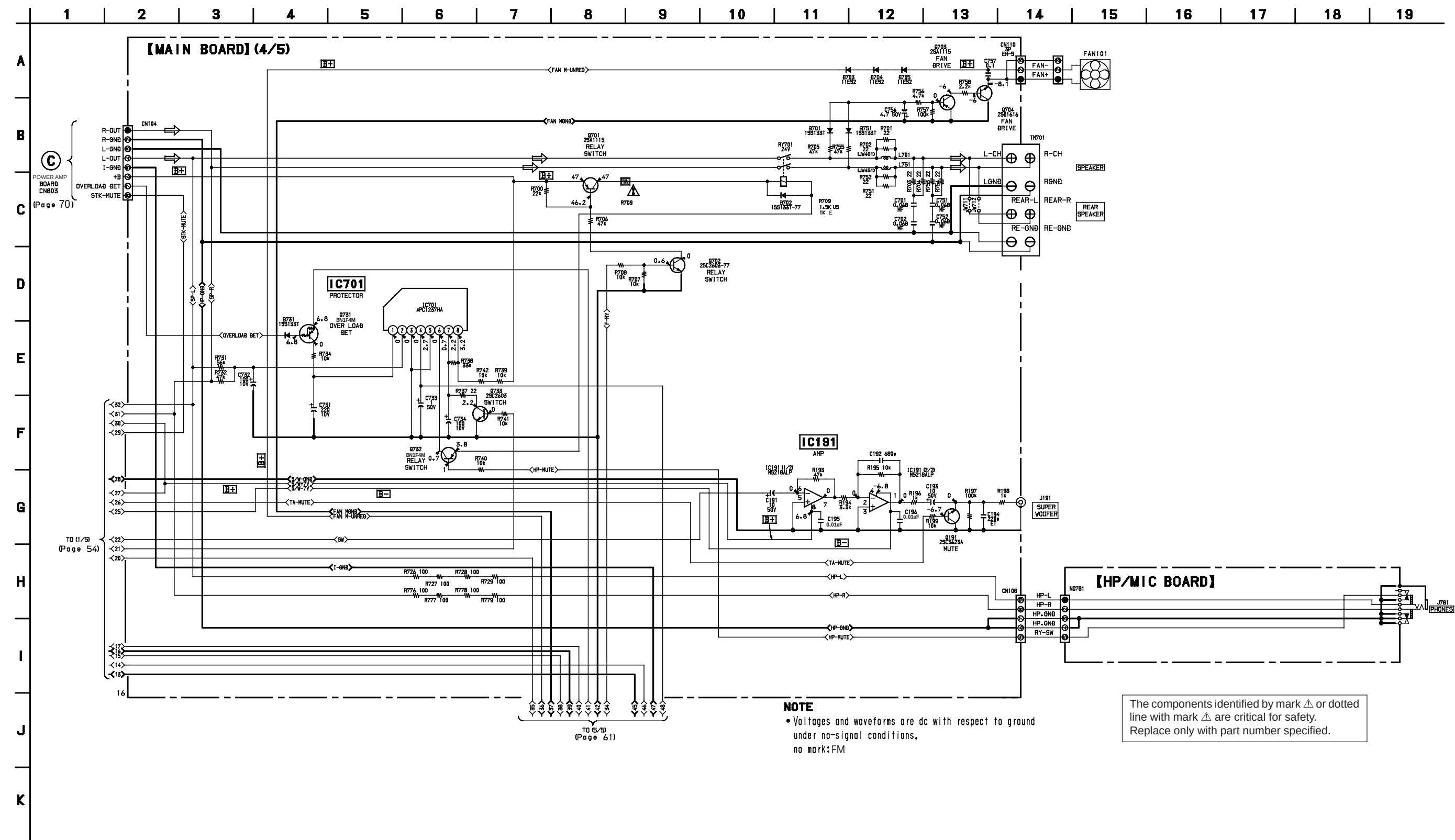
6-13. SCHEMATIC DIARGAM MAIN (2/5) SECTION • See page 51 for Printed Wiring Board. • See page 71 for Waveforms. • See page 77 for IC Pin Functions.



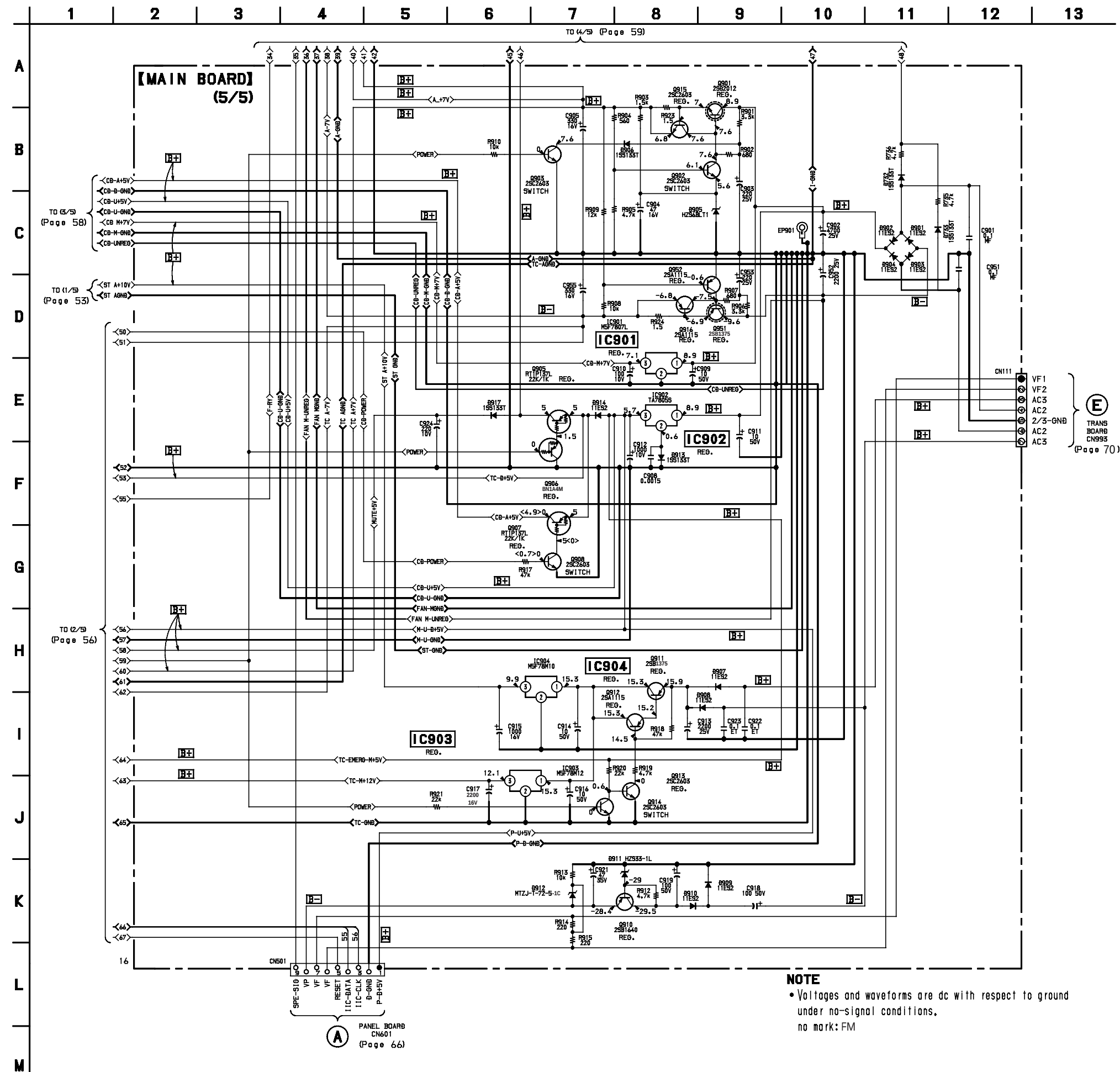
6-14. SCHEMATIC DIAGRAM MAIN (3/5) SECTION • See page 51 for Printed Wiring Board. • See page 71 for Waveforms. • See page 56 for IC Pin Functions.



6-15. SCHEMATIC DIAGRAM MAIN (4/5) SECTION • See page 51 for Printed Wiring Board. • See page 80 for IC Block Diagrams.



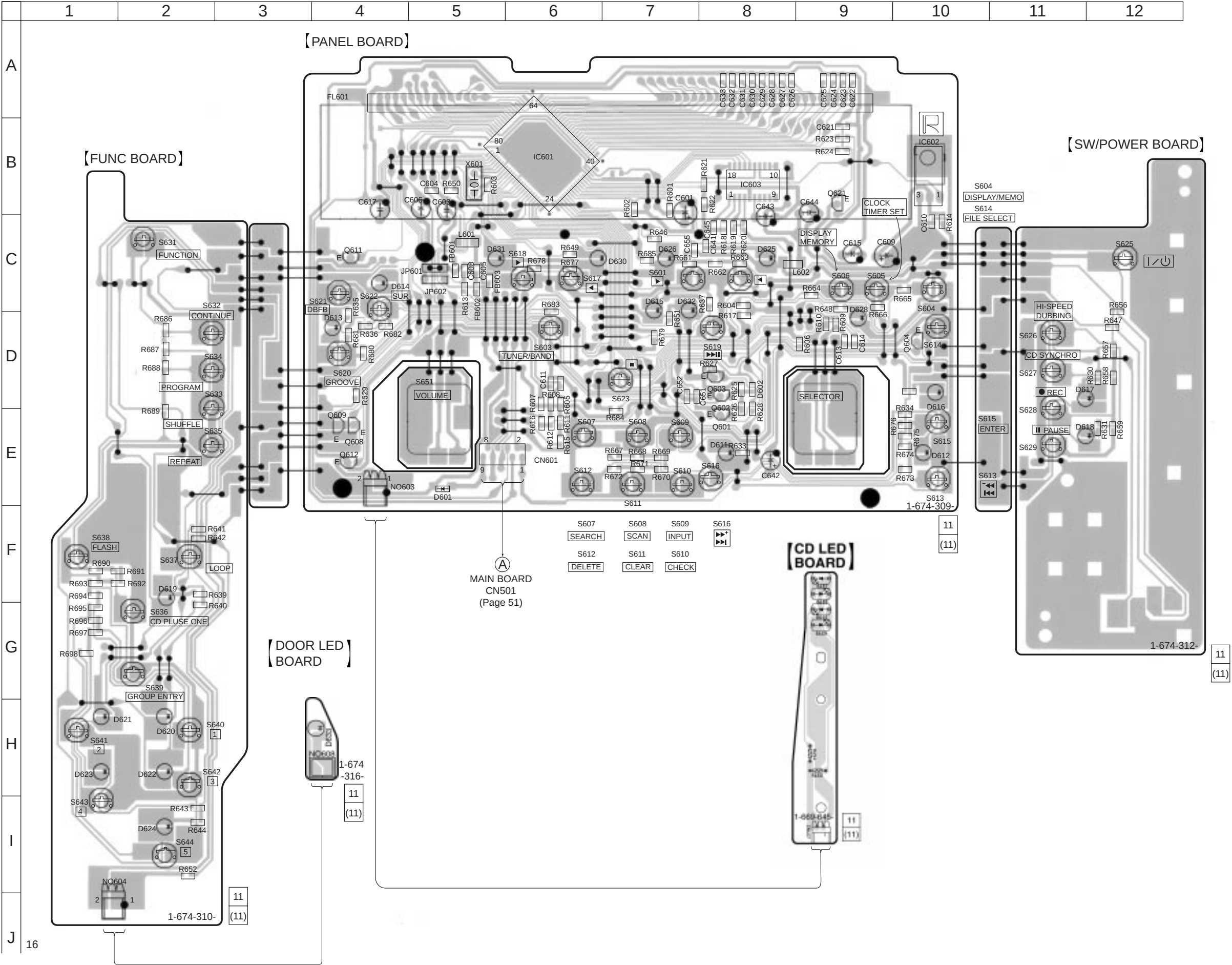
6-16. SCHEMATIC DIAGRAM MAIN (5/5) SECTION • See page 51 for Printed Wiring Board.



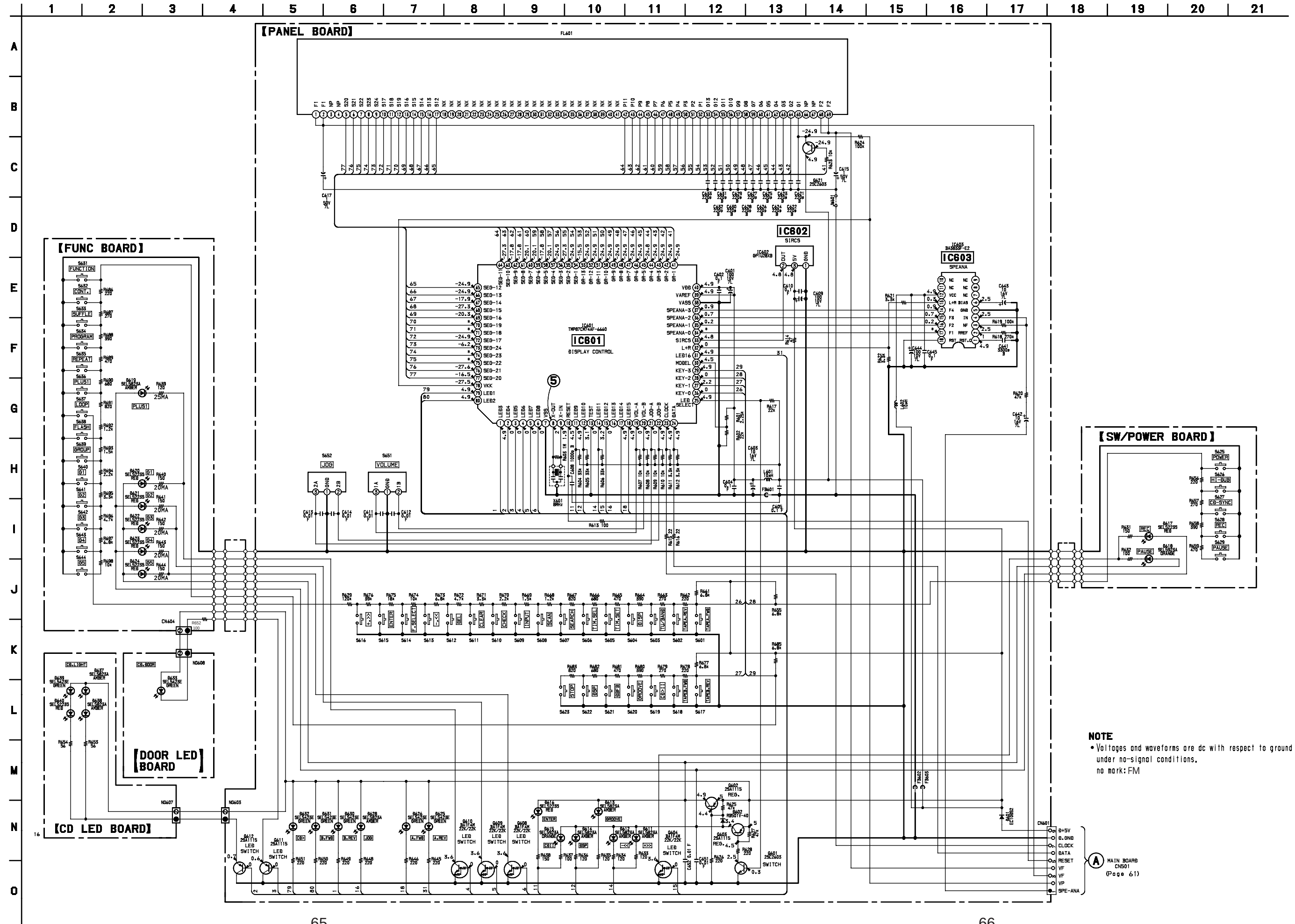
6-17. PRINTED WIRING BOARD PANEL SECTION • See page 33 for Circuit Boards Location.

• Semiconductor Location

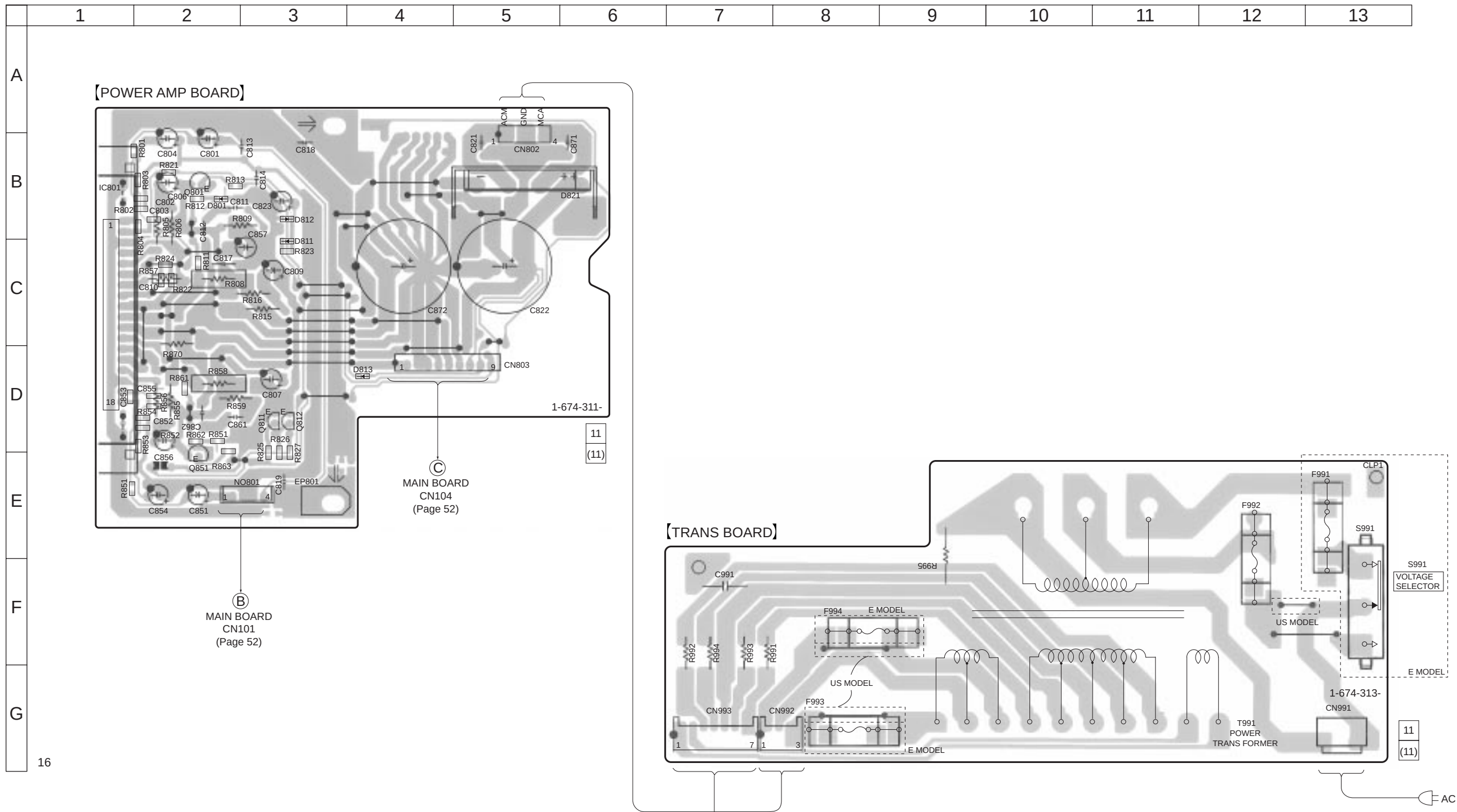
Ref. No.	Location
D601	E-5
D602	D-8
D611	E-8
D612	E-10
D613	D-4
D614	C-4
D615	C-7
D616	D-10
D617	D-11
D618	E-11
D619	F-2
D620	H-2
D621	H-1
D622	H-2
D623	H-1
D624	I-2
D625	C-8
D626	C-7
D628	C-9
D630	C-6
D631	C-5
D632	C-7
D633	H-4
D637	F-9
D638	F-9
D639	G-9
D640	G-9
IC601	B-6
IC602	B-10
IC603	B-8
Q601	E-8
Q602	D-8
Q603	D-8
Q604	D-10
Q608	E-4
Q609	E-4
Q611	C-4
Q612	E-4
Q621	B-9



6-18. SCHEMATIC DIAGRAM PANEL SECTION • See page 80 for IC Block Diagrams. • See page 71 for Waveforms. • See page 79 for IC Pin Function Description.



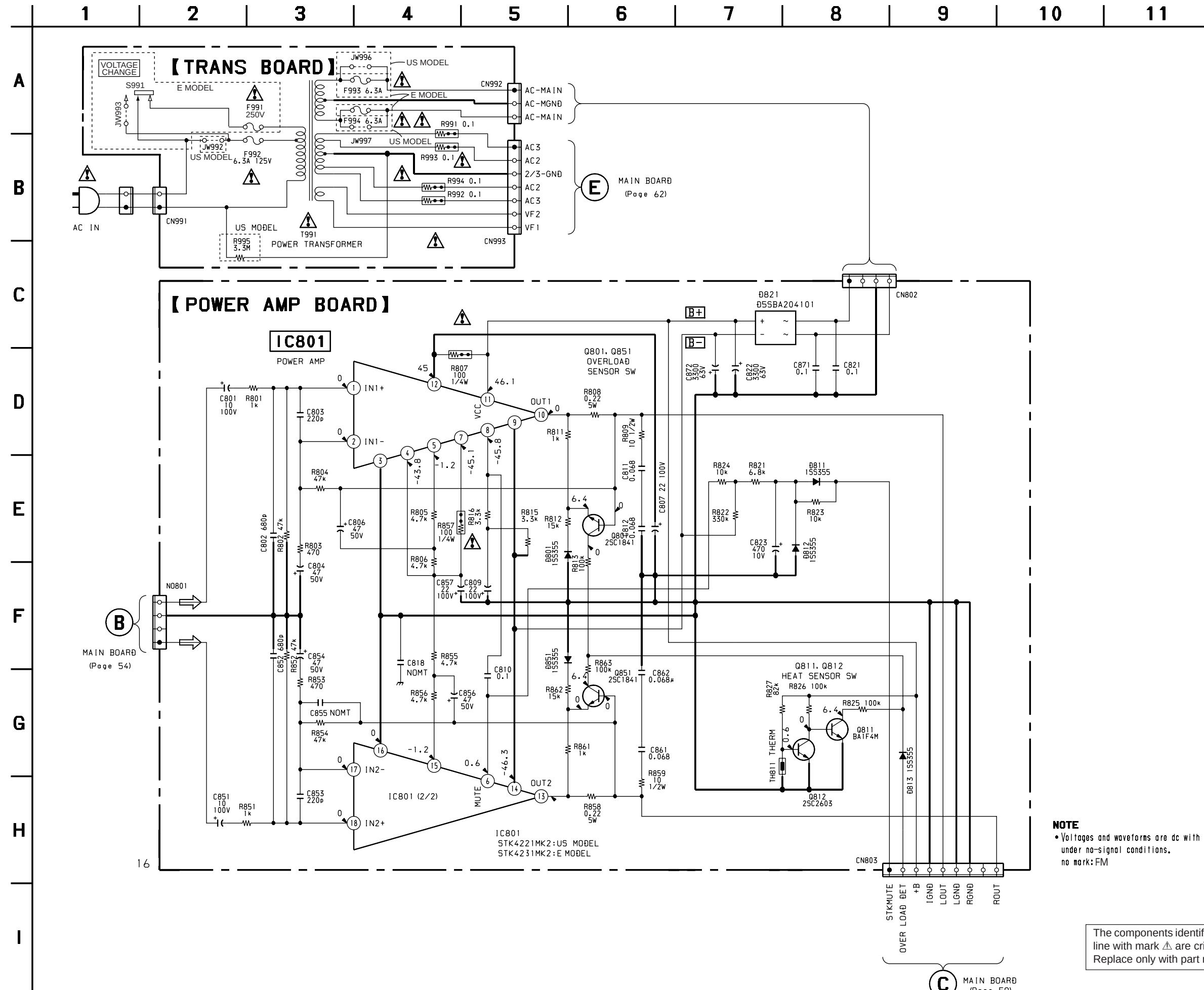
6-19. PRINTED WIRING BOARD POWER SECTION • See page 33 for Circuit Boards Location.



- **Semiconductor Location**

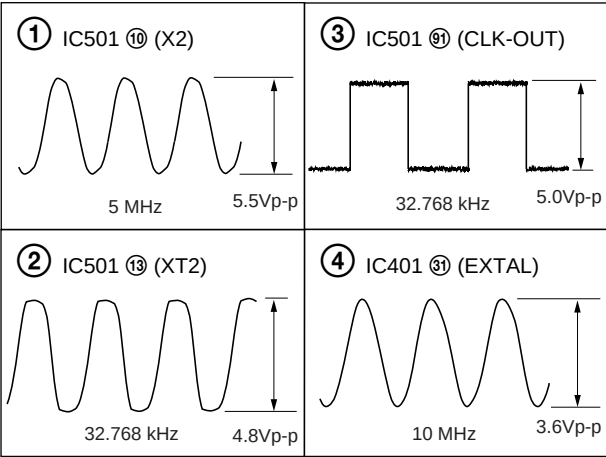
Ref. No.	Location
D801	B-2
D811	C-3
D812	B-3
D813	D-4
D821	B-6
IC801	C-1
Q801	B-2
Q811	D-3
Q812	D-3
Q851	E-2

6-20. SCHEMATIC DIAGRAM POWER SECTION

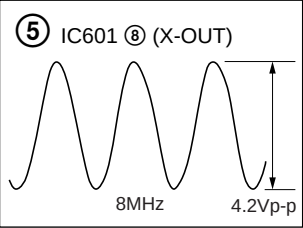


6-21. WAVEFORMS

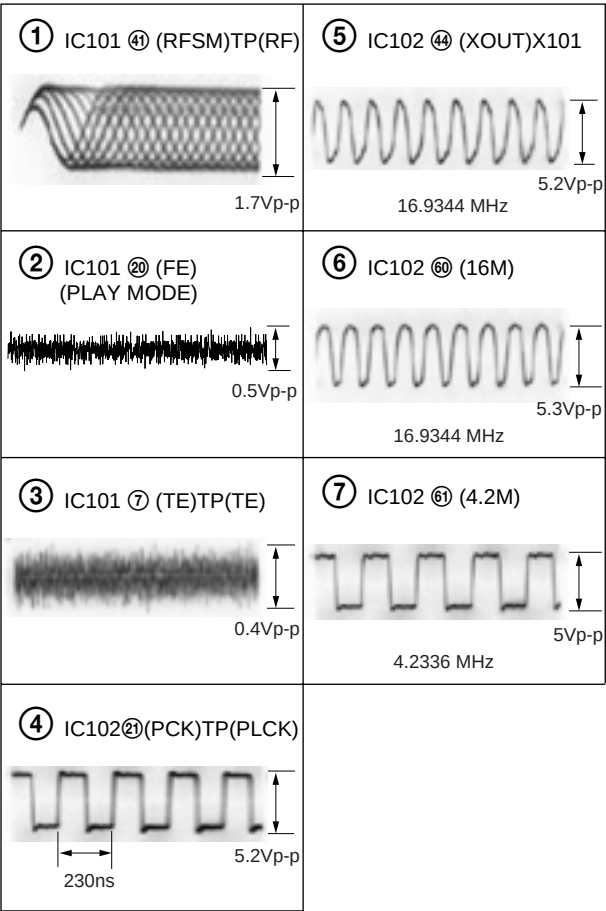
– MAIN Section –



– PANEL Section –



– BD Section –



6-22. IC PIN FUNCTION DESCRIPTION

BD BOARD IC101 LA9240M (FOCUS/TRACKING/SLED SERVO, RF AMP)

Pin No.	Pin Name	I/O	Function
1	FIN2	I	Connected to the pick-up photodiode Added with FIN1 to create RF signal, subtracted with FIN1 to create FE signal
2	FIN1	I	Connected to the pick-up photodiode
3	E	I	Connected to the pick-up photodiode Subtracted with F to create TE signal
4	F	I	Connected to the pick-up photodiode
5	TB	I	DC component of the TE signal is input
6	TE–	I	Connects the TE signal gain setting resistor between TE pins
7	TE	O	TE signal output
8	TESI	I	TES (Track Error Sense) comparator input. The TE signal is band-passed and input
9	SCI	I	Shock detection input
10	TH	I	Tracking gain time constant setting
11	TA	O	TA amplifier output
12	TD–	I	Creates a tracking phase compensation constant between TD and VR pins
13	TD	O	Tracking phase compensation setting
14	JP	I	Tracking jump signal (kick pulse) amplitude setting
15	TO	O	Tracking control signal output
16	FD	O	Focusing control signal output
17	FD–	I	Creates a focusing phase compensation constant between FD and FA pins
18	FA	O	Creates a focusing phase compensation constant between FD- and FA- pins
19	FA–	I	Creates a focusing phase compensation constant between FA and FE pins
20	FE	O	FE signal output
21	FE–	I	Connects the FE signal gain setting resistor between TE pins
22	AGND	—	Analog signal Ground
23	SP	O	Single end output of CV+ and CV- pin signal
24	SPI	I	Spindle amplifier input
25	SPG	I	Gain setting resistor is connected when the spindle 12cm mode
26	SP–	I	Works together with the SPD pin to connect to the spindle phase compensation constant
27	SPD	O	Spindle control signal output
28	SLEQ	I	Sled phase compensation constant is connected
29	SLD	O	Sled control signal output
30	SL–	I	Sled feeding signal is input from the microprocessor
31	SL+	I	Sled feeding signal is input from the microprocessor
32	JP–	I	Tracking jump signal is input from the DSP
33	JP+	I	Tracking jump signal is input from the DSP
34	TGL	I	Tracking gain control signal is input from the DSP Gain becomes low when TGL is “H”
35	TOFF	I	Tracking off control signal is input from the DSP Tracking becomes off when TOFF is “H”
36	TES	O	Outputs TES signal to the DSP
37	HFL	O	HFL (High Frequency Level) is used to determine whether the main beam is positioned on a pit or a mirror

Pin No.	Pin Name	I/O	Function
38	SLOF	I	Sled servo off control input
39	CV-	I	CLV error signal is input from the digital signal processor
40	CV+	I	CLV error signal is input from the digital signal processor
41	RFSM	O	RF output
42	RFS-	I	Works together with the RFSM pin to set the RF gain and the 3T compensation constant for the EFM signal
43	SLC	O	SLI (Slice Level Control) is output to control a data slice level of the RF waveform by the digital signal processor
44	SLI	I	Input pin for controlling a data slice level by the digital signal processor
45	DGND	—	Digital Ground
46	FSC	O	Focus search smoothing capacitor output
47	TBC	I	TBC (Tracking Balance Control) sets a EF balance variable range
48	NC	—	Not used
49	DEF	O	Defect detection output for a disc
50	CLK	I	Reference clock input The 4.23 MHz of the digital signal processor is input
51	CL	I	Microprocessor command clock input
52	DAT	I	Microprocessor command data input
53	CE	I	Microprocessor command chip enable input
54	DRF	O	DRF (Defect RF) outputs a RF level detection
55	FSS	I	FSS (Focus Search Select) is a switching pin for the focus search mode ($\pm$ search/+search for a reference voltage)
56	VCC2	—	Servo system and digital system VCC
57	RFFI	I	Reference voltage bus control is connected
58	VR	O	Reference voltage output
59	LF2	I	Constant setting for a disc defect detection
60	PH1	I	Connected to the capacitor for the RF signal peak hold
61	BH1	I	Connected to the capacitor for the RF signal bottom hold
62	LDD	O	APC circuit output
63	LDS	I	APC circuit input
64	VCC1	—	RF system VCC

- Abbreviation
EFM : Eight to Fourteen Modulation
APC : Auto Power Control

BD BOARD IC102 LC78622E (DIGITAL SIGNAL PROCESSOR)

Pin No.	Pin Name	I/O	Function
1	DEFI	I	Defect detection signal (DEF) input (Be sure to connect to 0 when not in use)
2	TAI	I	PLL test input to incorporate a pull-down resistor (Be sure to connect to 0V)
3	PDO	O	PLL phase comparison output for external VCO control
4	VVSS	—	PLL ground for the built-in VCO (Be sure to connect to 0 when not in use)
5	ISSET	I	Connected to a current adjusting resistor for the PDO output
6	VVDD	—	Built-in VCO power supply
7	FR	I	Adjusts the VCO frequency range
8	VSS	—	Digital Ground to be sure to connect to 0
9	EFMO	O	Slice level control to EFM signal output
10	EFMIN	I	Slice level control to EFM signal input
11	TEST2	I	Test input to incorporate a pull-down resistor (Be sure to connect to 0V)
12	CLV+	O	Disc motor control output (3-value output available depending on the command)
13	CLV-	O	
14	V/P	O	Rough servo/phase control automatic switching monitor output “H”:rough servo, “L”:phase servo
15	HFL	I	Tracking detection signal input (Schmidt input)
16	TES	I	Tracking error signal input (Schmidt input)
17	TOFF	O	Tracking OFF output
18	TGL	O	Tracking gain switching output (Raises gain when “L”)
19	JP+	O	Track jump control output (3-value output available depending on the command)
20	JP-	O	
21	PCK	O	EFM data playback clock monitor (4.3218 MHz when phase is locked)
22	FSEQ	O	Sync signal detection output (“H” when a sync signal detected from the EFM signal and that generated internally coincide)
23	VDD	—	Digital power supply
24	CONT1	I/O	General purpose output 1. Performs control using a serial data command from the microprocessor (When not in use, connect to 0V by setting to an input or set to an open state by setting to an output)
25	CONT2	I/O	General purpose output 2. Performs control using a serial data command from the microprocessor (When not in use, connect to 0V by setting to an input or set to an open state by setting to an output)
26	CONT3	I/O	General purpose output 3. Performs control using a serial data command from the microprocessor (When not in use, connect to 0V by setting to an input or set to an open state by setting to an output)
27	CONT4	I/O	General purpose output 4. Performs control using a serial data command from the microprocessor (When not in use, connect to 0V by setting to an input or set to an open state by setting to an output)
28	CONT5	I/O	General purpose output 5. Performs control using a serial data command from the microprocessor (When not in use, connect to 0V by setting to an input or set to an open state by setting to an output)

• Abbreviation

PLL : Phase Locked Loop

EFM : Eight to Fourteen Modulation

Pin No.	Pin Name	I/O	Function
29	EMPH	O	Deemphasis monitor The deemphasis disc is being played back when “H”
30	C2F	O	C2 flag output
31	DOUT	O	Digital OUT output (EIAJ format)
32	TEST3	I	Test input Incorporates a pull-down resistor Be sure to connect to 0V
33	TEST4	I	Test input Incorporates a pull-down resistor Be sure to connect to 0V
34	NC	—	Not used Be sure to use it in an open state
35	MUTEL	O	L channel 1-bit DAC L channel mute output
36	LVDD	—	L channel 1-bit DAC L channel power supply
37	LCHO	O	L channel 1-bit DAC L channel output
38	LVSS	—	L channel 1-bit DAC L channel ground Be sure to connect to 0V
39	RVSS	—	R channel 1-bit DAC R channel ground Be sure to connect to 0V
40	RCHO	O	R channel 1-bit DAC R channel output
41	RVDD	—	R channel 1-bit DAC R channel power supply
42	MUTER	O	R channel 1-bit DAC R channel mute output
43	XVDD	—	Power supply for the crystal oscillator
44	XOUT	O	Connected to the 16.9344 MHz crystal oscillator
45	XIN	I	
46	XVSS	—	Ground for the crystal oscillator Be sure to connect to 0V
47	SBSY	O	Sync signal output for the subcode block
48	EFLG	O	C1, C2, single correction, and double correction monitor
49	PW	O	Subcode P, Q, R, S, T, U, W output
50	SFSY	O	Subcode frame sync signal output
			Rises when the subcode is in a standby
51	SBCK	I	Subcode read clock input Schmidt input (Connect to 0V when not in use)
52	FSX	O	7.35 kHz sync signal output divided from the crystal oscillation
53	WRQ	O	Subcode Q output standby output
54	RWC	I	Read/write control input Schmidt input
55	SQOUT	O	Subcode Q output
56	COIN	I	Command input from the microprocessor
57	CQCK	I	Command input fetching clock input or subcode extracting clock input from SQOUT Schmidt input
58	RES	I	LC78622 reset input Temporarily set to “L” when the power is turned ON
59	TEST11	O	Test output Use it in an open state (Normally, “L” output)
60	16M	O	16.9344 MHz output
61	4.2M	O	4.2336 MHz output
62	TEST5	I	Test input. Incorporates a pull-down resistor. Be sure to connect to 0V
63	CS	I	Chip select input Incorporates a pull-down resistor Be sure to connect to 0V when not in control
64	TEST1	I	Test input Does not incorporate a pull-down resistor Be sure to connect to 0V

Note) Supply the same potential to each power supply pin (VDD, VVDD, LVDD, RVDD, XVDD).

MAIN BOARD IC401 CXP84632-031Q (CD CHANGER CONTROL)

Pin No.	Pin Name	I/O	Function
1	—	—	Not used
2	ICSW	O	IC reset signal output
3	—	—	Not used
4	HHOUT	O	Plus one LED signal output
5	—	—	Not used
6 to 13	D0 to D7	I/O	SRAM data I/O
14 to 28	A0 to A14	O	SRAM address output
29	/WE	O	SRAM write enable output
30	RESET	I	Reset signal input
31	10MHz	O	X'tal(10MHz)
32	10MHz	I	X'tal(10MHz)
33	VSS	—	Ground
34, 35	—	—	Not used
36	AVSS	—	Analog ground
37	AVREF	I	Analog refernce voltage input
38 to 41	—	—	Not used
42	D-SENS	I	Disc detect sensor signal input
43 to 46	—	—	Not used
47	SLED-P	O	Sled motor control signal output
48	CLK	O	Clock signal output for LC78622E
49	SUBQ	I	CD sub-code input from LC78622E
50	DATA	O	Command output for LC78622E
51 to 53	—	—	Not used
54	FOK	I	DRF(FOK) signal input from LC78622E
55	WRQ	I	Sub-code synchronizing signal input from LC78622E
56	—	—	Not used
57	TGL	I	Tracking gain control signal input from LC78622E
58	RWC	O	RWC(latch) output for LC78622E
59	SLED-M	O	Sled motor control output
60	—	—	Not used
61 to 63	TSENS1 to TSENS3	I	Table sensor input
64	DQSY	I	Data synchronizing signal input from decoder
65	TCLK	O	Clock output for decoder
66	TDATA	I	Data input from decoder
67	TMODE	O	System down signal output for decoder
68	—	—	Not used
69	DOORSW	I	Front cover close detect input
70	OUTSW	I	Loading motor out detect input
71	INSW	I	Loading motor in detect input
72	VDD	—	Power supply(+5V)
73	—	—	Not used
74	TBLR	O	Table motor counter clock wise turn signal output
75	TBLL	O	Table motor clock wise turn signal output
76	LODOUT	O	Loading motor out direction signal output
77	LODIN	O	Loading motor in direction signal output
78	IICCLK	I	Serial data clock input
79	—	—	Not used
80	IICDAT	I/O	Serial data I/O

MAIN BOARD IC501 uPD780016AYGF-011-3BA (MAIN CONTROL)

Pin No.	Pin Name	I/O	Function
1	LINE-MUTE	O	Line mute signal output
2	DBFB-H/L	O	DBFB H/L select signal output
3	442-LT	O	Latch signal output for IC101(M62442FP)
4	—	—	Not used
5	POWER	O	Power control signal output
6	F-RELAY	O	Main speaker relay control signal output
7	R-RELAY	O	Surround speaker relay control signal output(Not used)
8	PL-RELAY	O	Surround speaker relay control signal output
9	VSS	—	Ground
10	X2	O	X'tal(5MHz)
11	X1	I	X'tal(5MHz)
12	VDD	—	Power supply(+5V)
13	XT2	O	X'tal(32.768kHz)
14	XT1	I	X'tal(32.768kHz)
15	RESET	I	Reset signal input
16	AC-CUT	I	AC check input
17	CAPM-CNT1P	I	Capstan motor control 1(+) signal output
18	SCOR	O	Subcode data request signal output(Not used)
19	SOFT-TEST	O	Software test port
20	CAPM-CNT2P	I	Capstan motor control 2(+) signal output(Not used)
21	RDS-INT	I	Serial data transfer clock input
22	RDS-DATA	I	Serial data input
23	VDD	—	Power supply(+5V)
24	AVREF	I	Analog reference voltage input
25	ADJ	I	CD adjust point port
26	A-SHUT	I	Deck-A reel pulse detector
27	B-SHUT	I	Deck-B reel pulse detector
28	B-HALF	I	Half detector signal input
29	—	—	Not used
30	SPEC-IN	I	Versin select signal input
31	AMS-IN	I	AMS signal input
32	—	—	Not used
33	AVSS	—	Analog ground
34	SQ-DATA-IN	I	Sub code Q data input(Not used)
35	—	—	Not used
36	SQ-CLK	I	Sub code Q data clock input(Not used)
37	SW-ON/OFF	O	Super woofer ON/OFF control output(Not used)
38	SW-MODE	O	Super woofer mode control output(Not used)
39	—	—	Not used
40	VSS	—	Ground
41	VOL-LAT	O	Latch signal 2 output for IC201(LV1041M)
42	PL-LAT	O	Latch signal 1 output for IC201(LV1041M)
43	COM-DIN	I	Common serial data input(Not used)
44	COM-DOUT	O	Common serial data output(Not used)
45	COM-CLK	O	Common serial clock output(Not used)
46	CD-POWER	O	CD power ON/OFF control output
47	CD-DATA	O	CD data output(Not used)
48	CD CLK	O	CD clock output(Not used)
49	PL-CLK	O	Clock signal output for IC201(LV1041M)
50	PL-DATA	O	Data signal output for IC201(LV1041M)

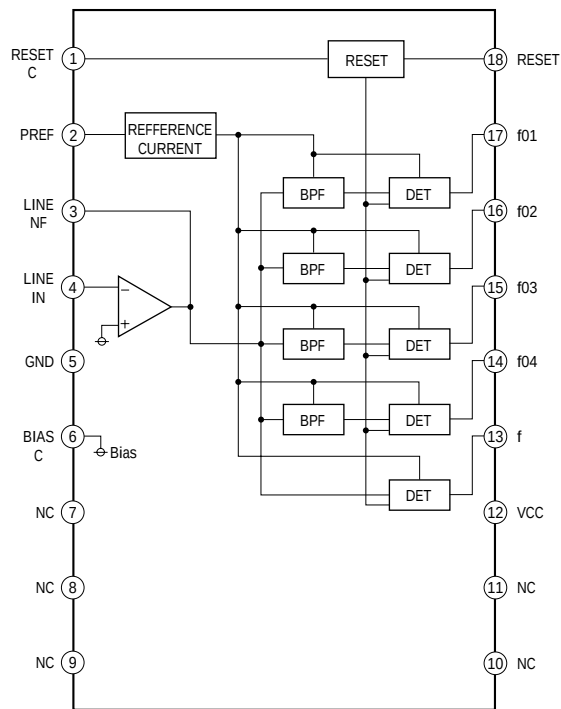
Pin No.	Pin Name	I/O	Function
51	442-CLK	O	Clock signal output for IC101(M62442FP)
52	442-DATA	O	Data signal output for IC101(M62442FP)
53	CENTER-MUTE	O	Center speaker mute signal output
54	-	-	Not used
55	IIC-DATA	O	Serial data output
56	IIC-CLK	O	Serial data clock output
57	XRST	O	CD reset signal output(Not used)
58	XLT	O	CD latch signal output(Not used)
59	FOCUS-SW	O	Focus switching signal output(Not used)
60	TBL-L	O	Table motor control signal output(Not used)
61	TBL-R	O	Table motor control signal output(Not used)
62	-	-	Not used
63	LOAD-OUT	O	Loading motor control signal output(Not used)
64	LOAD-IN	O	Loading motor control signal output(Not used)
65	ST-CLK	O	Tuner clock output
66	ST-DIN	I	Tuner data input
67	ST-DOUT	O	Tuner data output
68	ST-CE	O	Tuner chip enable output
69	TUNED	I	Tuned detection for tuner
70	STEREO	I	Stereo detection for tuner
71	VSS	-	Ground
72	ST-MUTE	O	Tuner mute signal output
73	SENS2	I	BD condition signal input(Not used)
74	SENS	I	BD condition signal input(Not used)
75	DISC-SENS	I	CD detection signal input(Not used)
76	T-SENS	I	CD table detection signal input(Not used)
77	CAPM-CNT2P	O	Capstan motor control 2(+) signal output(Not used)
78	ENC3	I	Disctray address detect encoder input(Not used)
79	ENC2	I	Disctray address detect encoder input(Not used)
80	ENC1	I	Disctray address detect encoder input(Not used)
81	OUT-OPEN	I	Out switch signal input(Not used)
82	CAP-M-H/L	O	Capstan motor High/Nomal speed select signal output(Not used)
83	B-TRG	O	B-deck trigger motor control signal output
84	A-TRG	O	A-deck trigger motor control signal output
85	CAPM-CNT1M	O	Capstan motor control 1(-) signal output
86	CAPM-CNT2M	O	Capstan motor control 2(-) signal output
87	TC-MUTE	O	TC mute control signal output
88	R/PB/PAS	I	REC/PB/PASS selection output
89	NR-ON/OFF	O	NR ON/OFF signal output
90	REC-MUTE	O	REC mute signal output
91	CLOCK-OUT	O	Clock check output
92	BIAS	O	Bias control signal output
93	EQ-H/N	O	Equalizer High/Normal control output
94	PB-A/B	O	PB deck A/B select output
95	A-PLAY-SW	I	Deck A play detect input
96	B-PLAY-SW	I	Deck B play detect input
97	TC-RELAY	O	Relay control output
98	A-HALF	I	Deck A cassette detect input
99	ALC	O	ALC control output
100	STK-MUTE	O	Power amp mute signal output

PANEL BOARD IC601 TMP87CM74AF-6660 (DISPLAY CONTROL)

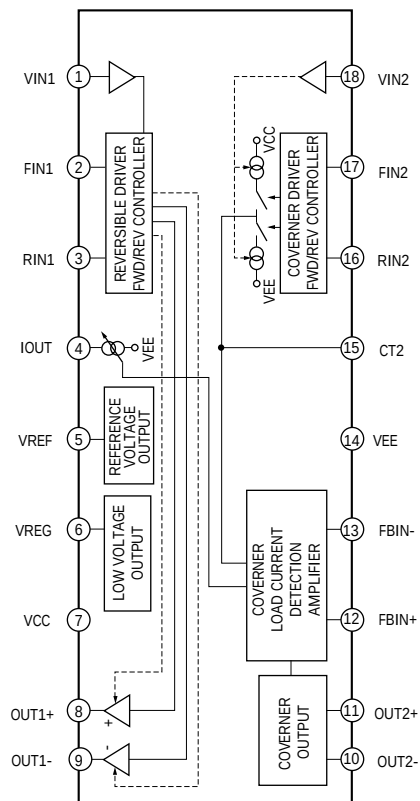
Pin No.	Pin Name	I/O	Function
1 to 6	LED3 to LED8	O	LED driver output
7	VSS	—	Ground
8	XOUT	O	X'tal(5MHz)
9	XIN	I	X'tal(5MHz)
10	RESET	I	Reset signal input
11,12	LED9,LED10	O	LED driver output
13	TEST	—	Not used
14 to 18	LED11 to LED15	O	LED driver output
19,20	VOLA,VOLB	I	Rotary encoder pulse input for Volume
21,22	JOGA,JOGB	I	Rotary encoder pulse input for Jog
23	SCL(IIC)	I	Serial data clock input
24	SDA(IIC)	I	Serial data input
25	LED SELECT	O	LED select signal output
26 to 29	KEY0 to KEY3	I	Key input
30	MODEL	I	Model No. input
31	LED16	O	LED driver output
32	L+R	I	Spectrum analyzer(high frequency)input
33	SIRCS	I	Remote commander signal input
34 to 37	SPEANA0 to SPEANA3	I	Spectrum analyzer signal input
38	AVSS	—	Ground
39	VAREF	—	Analog reference voltage input
40	VDD	—	Power supply(+5V)
41 to 53	GRID1 to GRID13	O	Fluorescent disply tube gride signal output
54 to 77	SEG1 to SEG24	O	Fluorescent disply tube segment signal output
78	VKK	—	—
79,80	LED1,LED2	O	LED driver output

6-23. IC BLOCK DIAGRAMS

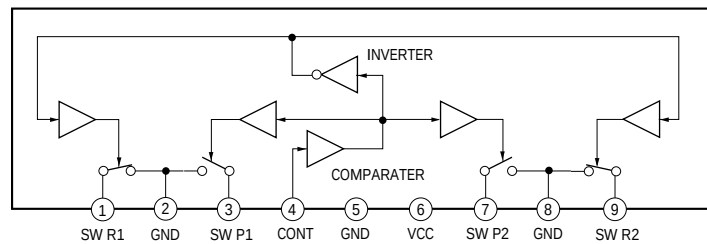
IC603 (PANEL BOARD) BA3833F-E2



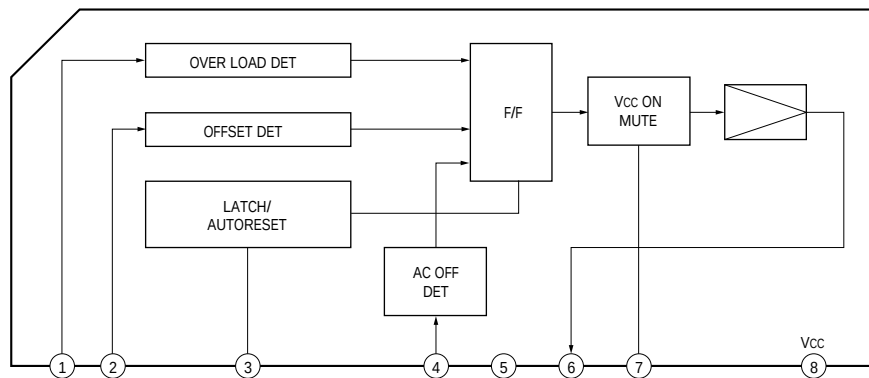
IC461 (MAIN BOARD) BA6780



IC602 (AUDIO BOARD) uPC1330HA



IC701 (MAIN BOARD) UPC1237HA



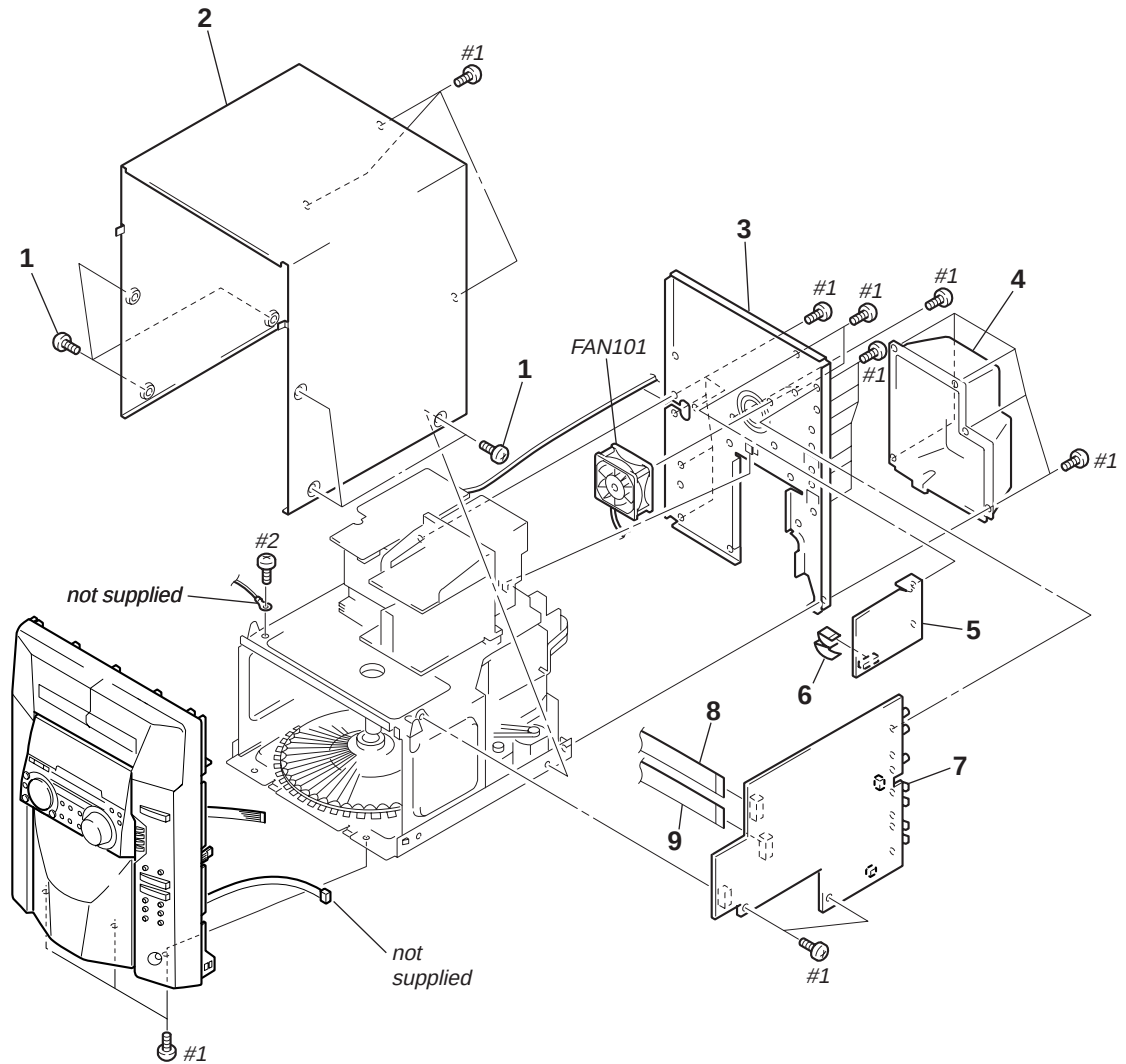
SECTION 7 EXPLODED VIEWS

NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

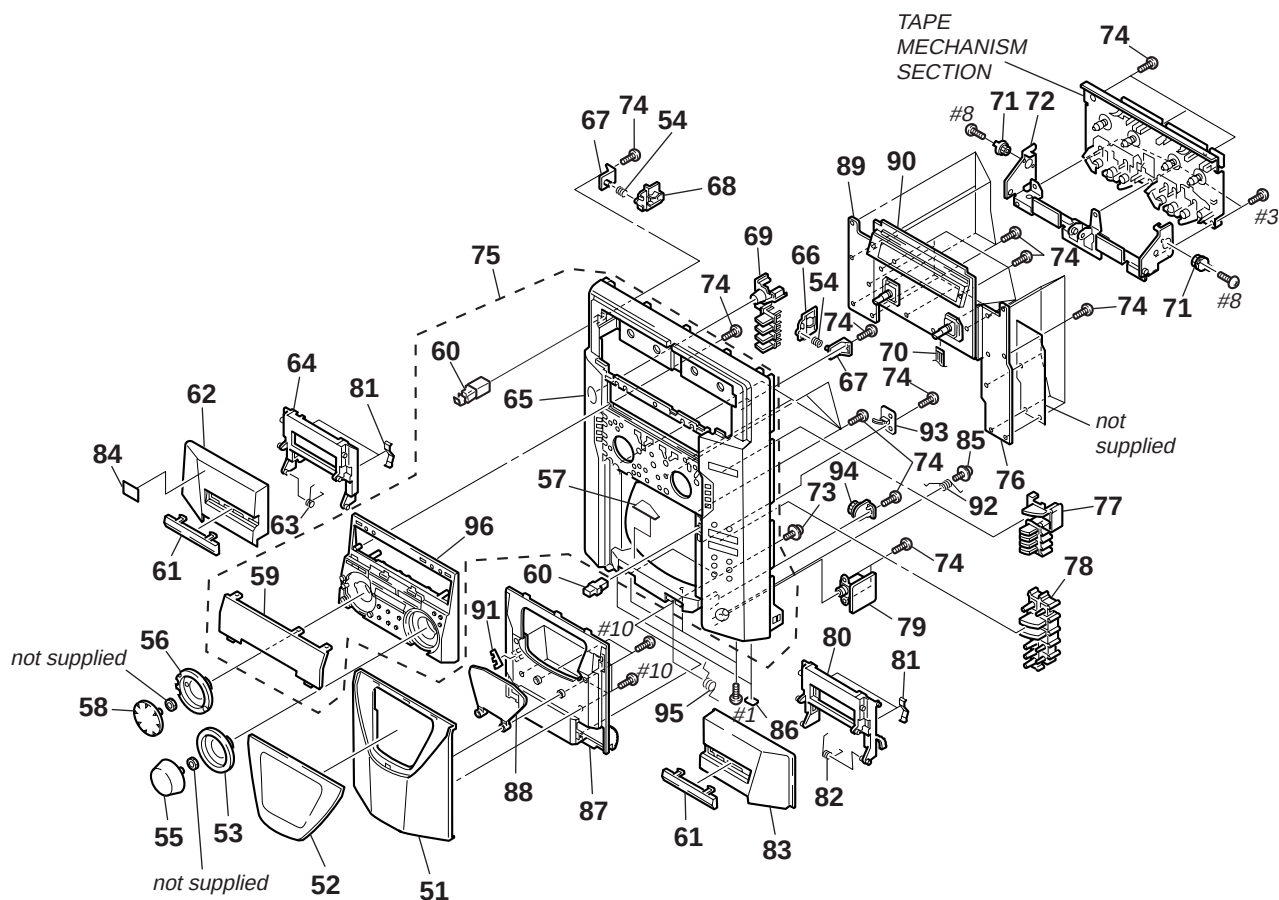
The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

7-1. CASE SECTION



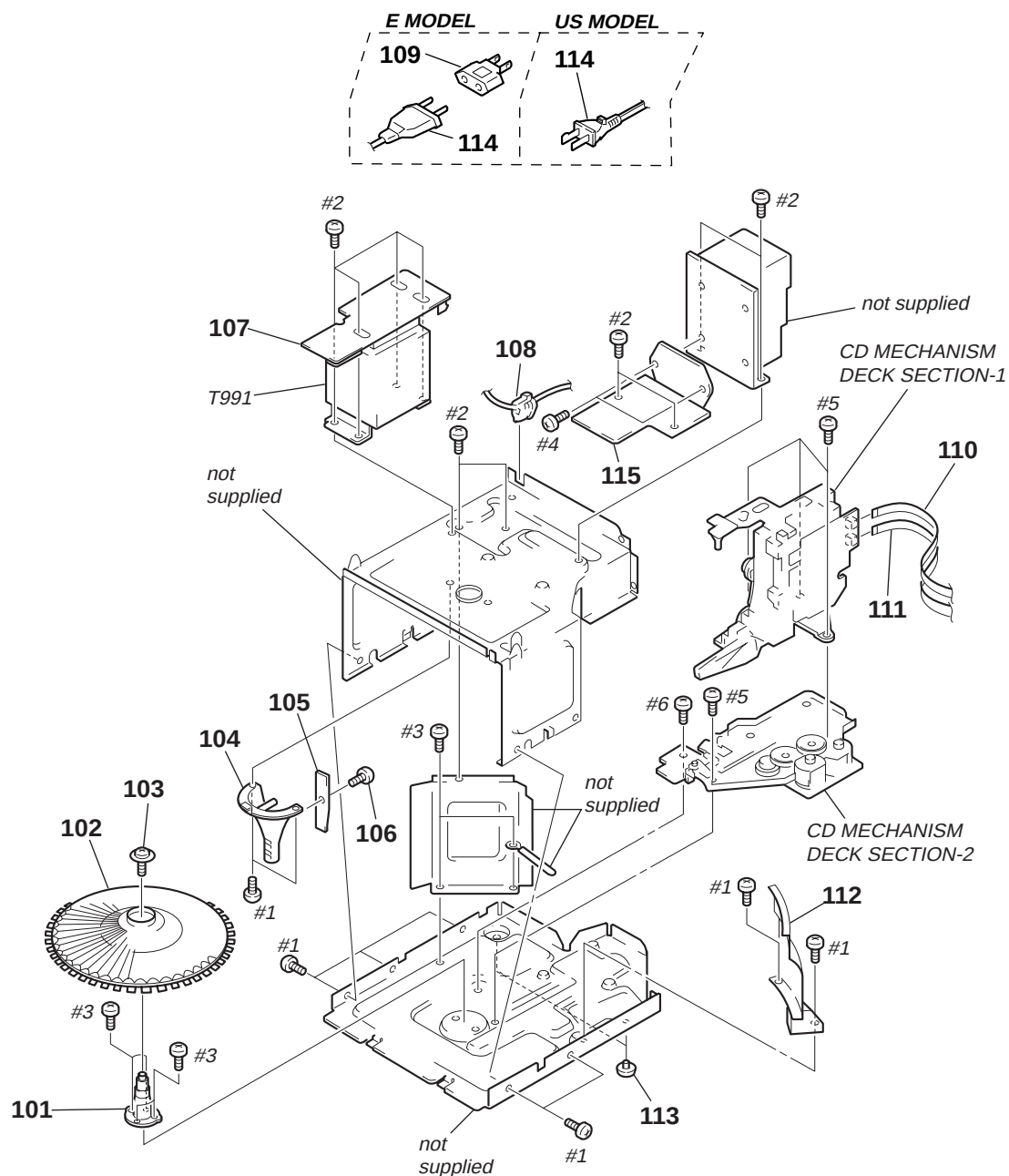
Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
1	3-363-099-11	SCREW (CASE 3 TP2)		6	1-769-972-11	WIRE(FLAT TYPE) (13 CORE)	
* 2	4-999-792-01	CASE		* 7	A-4426-587-A	MAIN BOARD, COMPLETE (US)	
* 3	4-221-076-21	PANEL, BACK (US)		* 7	A-4426-588-A	MAIN BOARD, COMPLETE (E)	
* 3	4-221-076-31	PANEL, BACK (E)		8	1-765-332-11	WIRE (FLAT TYPE) (15 CORE)	
* 4	4-990-365-11	COVER		9	1-773-055-11	WIRE (FLAT TYPE) (17 CORE)	
5	1-693-457-11	ENCAPSULATED COMPONENT (TUNER UNIT)		FAN101	1-698-792-11	FAN, DC	

7-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
51	4-222-507-01	CDDOOR (FRONT)		74	4-951-620-01	SCREW (2.6 × 8), +BVTP	
52	4-222-508-01	PLATE (CD DOOR)		75	A-4411-815-A	FRONT PANEL ASSY	
53	4-222-483-01	PING(VOLUME)		76	A-4426-605-A	FUNCBOARD, COMPLETE	
54	4-222-537-01	SPRING (LOCK), COMPRESSION		77	4-222-495-01	BUTTON (FUNCTION)	
55	4-222-486-01	KNOB(VOLUME)		78	X-4952-106-1	BUTTON (GROUP) ASSY	
56	4-222-482-01	RING(SELECTOR)		79	1-674-315-11	HP/MIC BOARD	
* 57	4-991-854-01	LABEL (DISC)		80	4-222-514-01	HOLDER (R), CASSETTE	
58	4-222-485-01	KNOB(SELECTOR)		81	4-959-229-11	DETENT, CASSETTE	
59	4-222-516-01	WINDOW (FL)		82	4-999-687-01	SPRING (B DECK)	
60	4-989-312-01	LATCH, NS		83	4-222-488-01	LID(R), CASSETTE	
61	4-222-487-01	WINDOW (CASSETTE)		84	4-962-708-71	EMBLEM (4-A), SONY	
62	4-222-536-01	LID(L), CASSETTE		85	4-933-134-61	SCREW (+PTPWH M2.6 × 6)	
63	4-999-686-01	SPRING (A DECK)		86	4-977-358-31	CUSHION	
64	4-222-513-01	HOLDER (L), CASSETTE		87	4-222-509-01	CD DOOR (REAR)	
65	4-222-481-01	CABINET, FRONT		88	4-222-510-01	PLATE (CD DOOR LENS)	
66	4-222-503-01	BRACKET, (LOCK L)		89	1-674-312-11	SW/POWER BOARD	
67	4-222-505-01	HOLDER LOCK		90	A-4426-571-A	PANEL BOARD, COMPLETE	
68	4-222-506-01	BRACKET, (LOCK R)		91	1-674-316-11	DOOR LED BOARD	
69	X-4952-107-1	BUTTON (POWER) ASSY		92	4-222-490-01	SPRING (DOOR 2), TORSION	
70	1-769-920-11	WIRE(FLAT TYPE) (9 CORE)		93	1-674-314-11	CD DOOR BOARD	
* 71	3-973-975-21	DAMPER, OIL		94	3-354-963-01	DAMPER	
* 72	4-999-677-01	BRACKET (TC)		95	4-222-501-01	SPRING (DOOR 1), TORSION	
73	4-957-577-31	SCREW PTP WH (2.6 × 8) (DIA. 10)		96	X-4952-103-1	SUB PANEL ASSY	

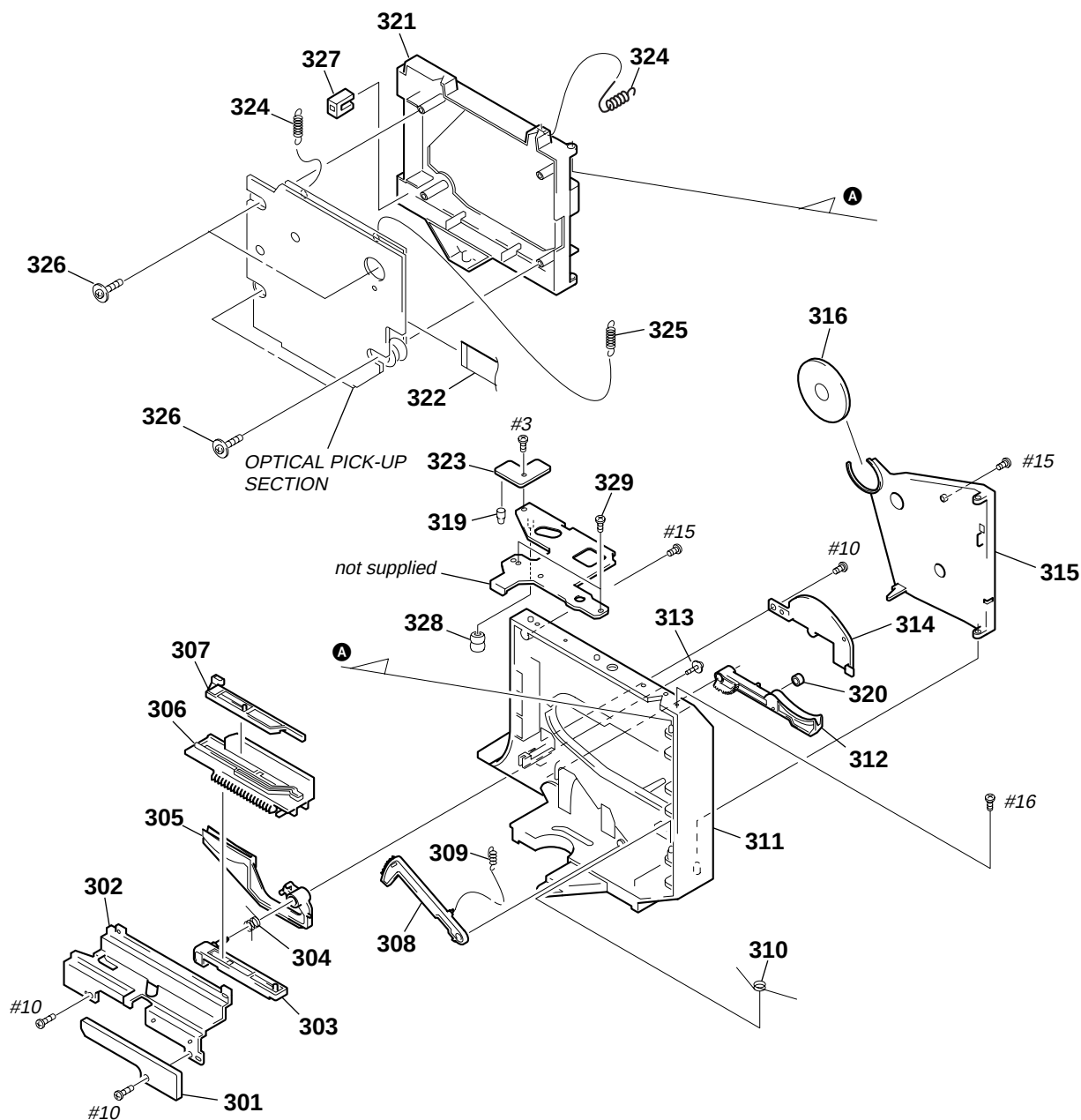
7-3. CHASSIS SECTION



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
101	4-988-439-01	HOLDER, TABLE		110	1-782-558-21	WIRE (FLAT TYPE) (16 CORE)	
102	4-988-434-01	TABLE (50)		111	1-782-559-21	WIRE (FLAT TYPE) (9 CORE)	
103	4-957-577-31	SCREW PTP WH (2.6 × 8) (DIA. 10)		* 112	4-990-370-11	COVER (CD)	
* 104	4-990-371-11	HOLDER (LED)		113	4-965-822-01	FOOT	
* 105	1-669-645-11	CD LED BOARD		△ 114	1-783-531-11	CORD, POWER (US)	
106	4-951-620-01	SCREW (2.6X8), +BVTP		△ 114	1-575-653-11	CORD, POWER (E)	
107	1-674-313-11	TRANS BOARD		* 115	A-4426-598-A	POWER AMP BOARD, COMPLETE (US)	
108	3-703-244-00	BUSHING (2104), CORD		* 115	A-4426-599-A	POWER AMP BOARD, COMPLETE (E)	
108	3-703-571-11	BUSHING (S) (4516), CORD		△ T991	1-431-348-31	TRANSFORMER, POWER (US)	
△ 109	1-569-007-11	ADAPTOR, CONVERSION 2P (E)		△ T991	1-431-842-21	TRANSFORMER, POWER (E)	

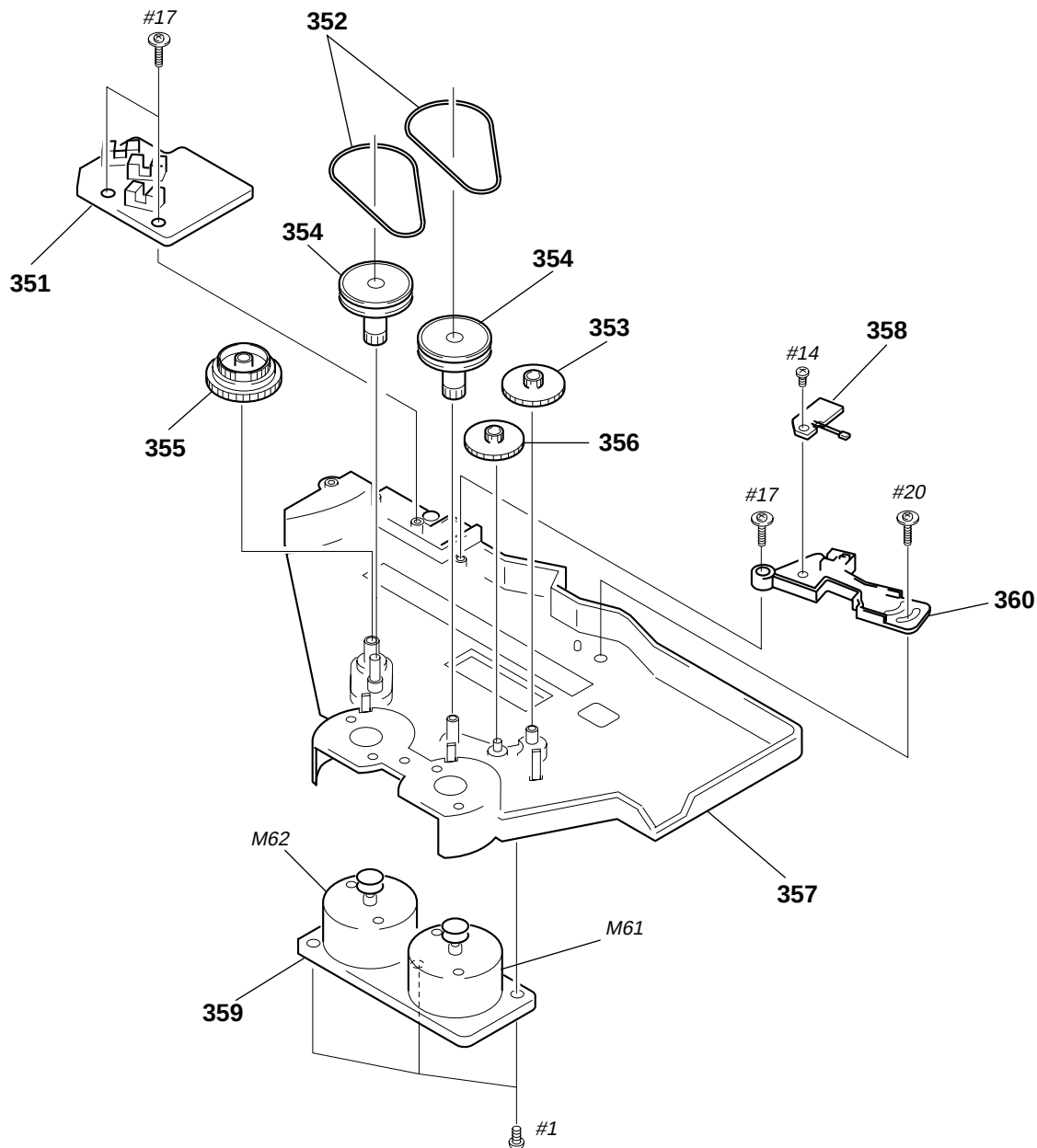
The components identified by mark △ or dotted line with mark △ are critical for safety.
Replace only with part number specified.

7-4. CD MECHANISM DECK SECTION-1 (CDM-46B1)



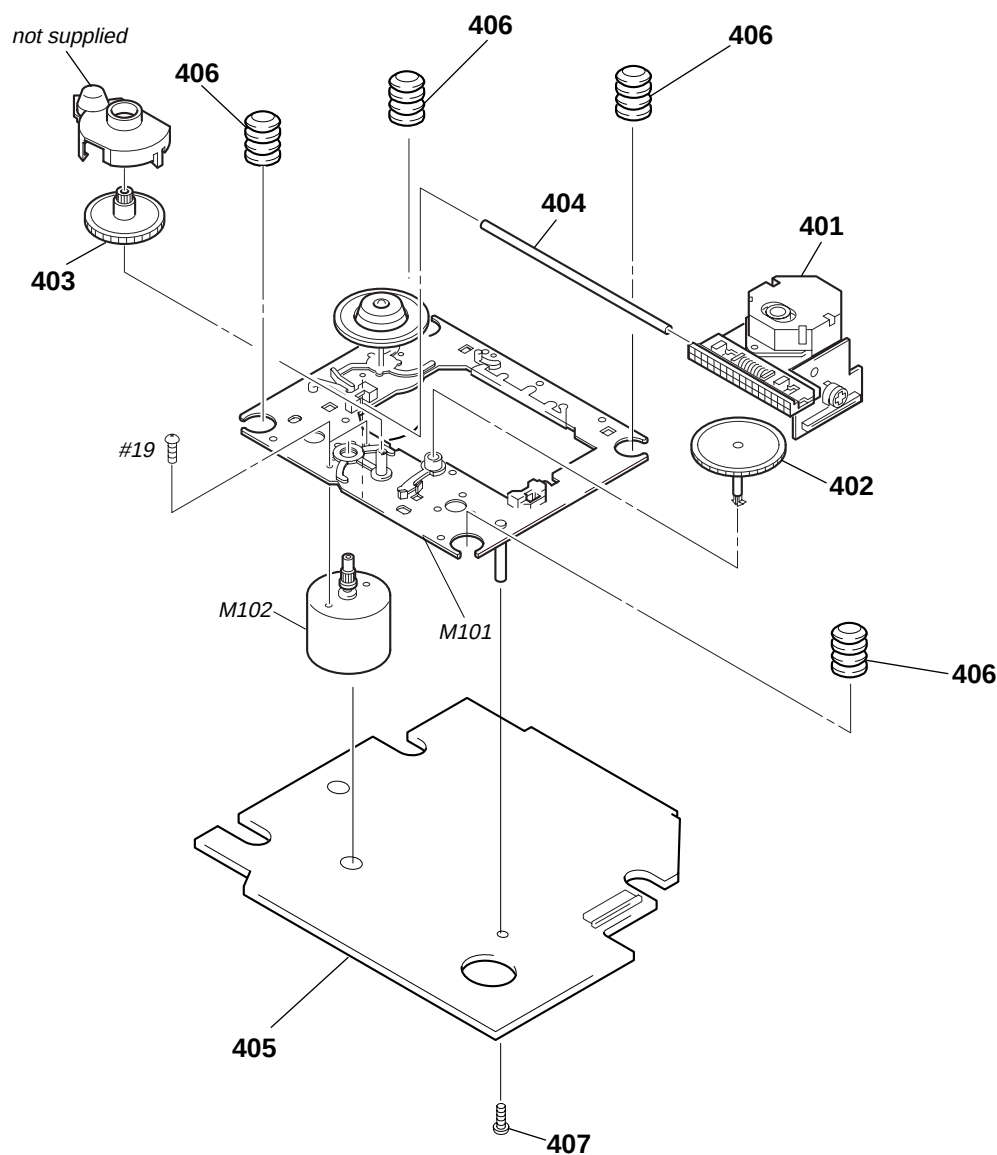
Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
* 301	1-663-975-11	DOOR SW BOARD		* 315	4-988-421-01	HOLDER (MAGNET)	
* 302	4-988-427-01	COVER, CAM		316	A-4672-522-A	MAGNET ASSY	
303	4-988-420-01	SLIDER (LOADING)		* 319	4-976-473-01	HOLDER (LED-S)	
304	4-988-436-01	SPRING (LOADING), TORSION		320	4-988-431-01	ROLLER (DISC)	
305	4-988-418-01	HOLDER (A), DISC		321	X-4948-019-1	HOLDER ASSY, BU	
* 306	4-988-417-01	SLIDER (CAM)		322	1-777-874-11	WIRE (FLAT TYPE) (16 CORE)	
307	4-988-433-01	SLIDER (LOCK)		* 323	1-663-973-11	DISC SENSOR (S) BOARD	
308	X-4948-020-1	LEVER (LOADING) ASSY		324	4-988-440-01	SPRING (F-1), TENSION	
309	4-988-438-01	SPRING (LEVER), TENSION		325	4-988-441-01	SPRING (F-2), TENSION	
310	4-988-437-01	SPRING (HOLDER), TORSION		326	4-957-577-21	SCREW PTP WH (2.6X8) (DIA. 10)	
* 311	4-988-416-01	BASE, LOADING		327	4-992-413-02	STOPPER	
312	4-988-419-01	HOLDER (B), DISC		328	3-910-095-31	RUBBER, VIBRATION PROOF	
313	4-992-069-01	SCREW (+PTPWH) (M2) (DIA. 7)		329	4-951-620-01	SCREW (2.6X8), +BVTP	
* 314	4-988-454-01	COVER (LEVER)					

7-5. CD MECHANISM DECK SECTION-2 (CDM-46B1)



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
* 351	1-663-971-11	TABLE SENSOR BOARD		* 357	4-988-426-01	BASE (CDM)	
352	4-988-414-01	BELT		* 358	1-663-972-11	DISC SENSOR (R) BOARD	
353	4-988-423-01	GEAR (A) (LOADING)		* 359	1-663-974-11	CDMOTOR BOARD	
354	4-988-425-01	PULLEY		* 360	4-990-669-01	HOLDER (SENSOR)	
355	4-988-424-01	GEAR (TABLE)		M61	X-4948-434-1	MOTOR ASSY(LOADING)	
356	4-988-432-01	GEAR (B) (LOADING)		M62	X-4948-434-1	MOTOR ASSY(TABLE)	

7-6. OPTICAL PICK UP SECTION (KSS-213BA/F-NP)

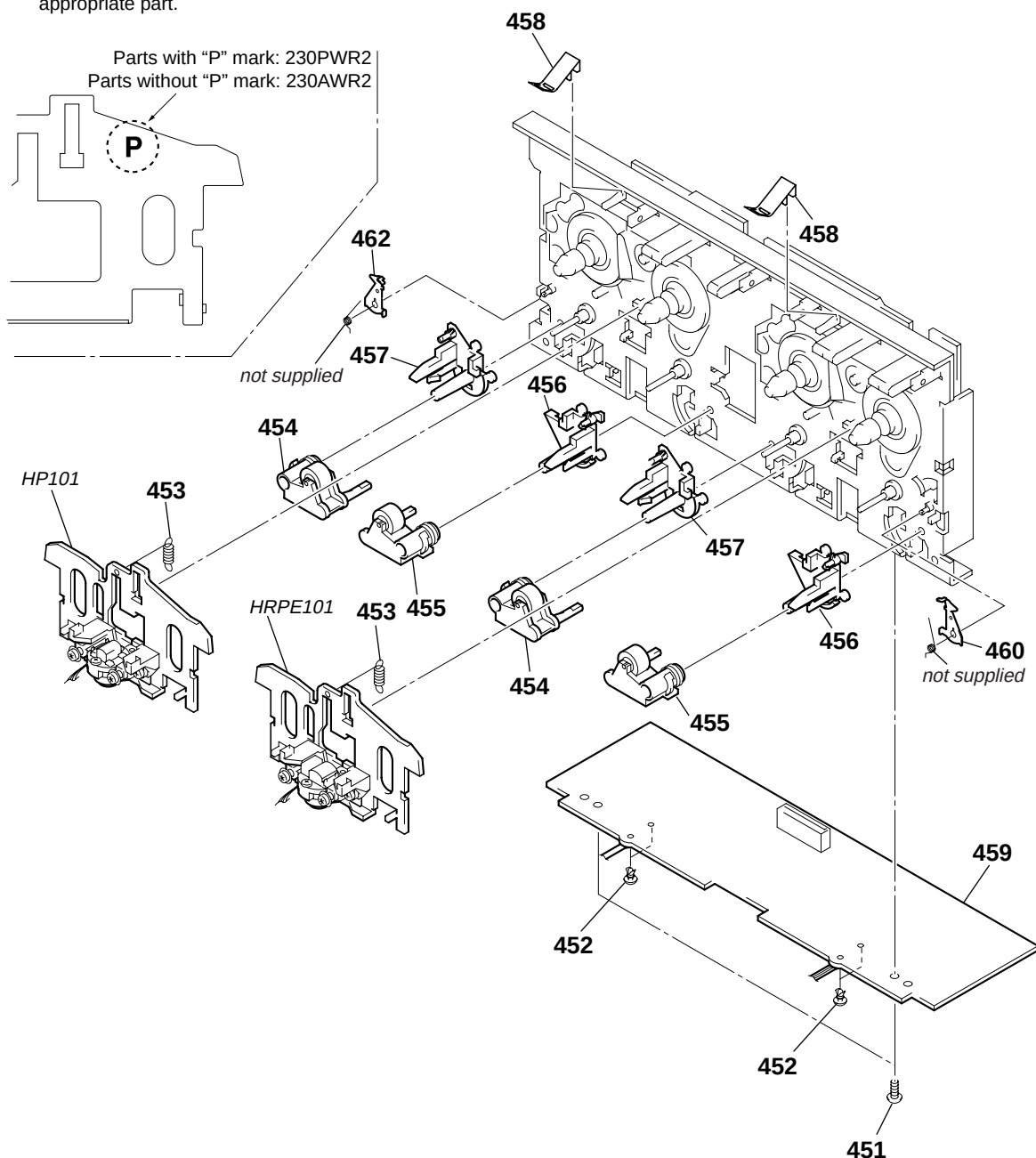


Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
△ 401	8-848-379-31	DEVICE,OPTICAL KSS-213BA/F-NP		* 405	A-4699-869-A	BD BOARD,COMPLETE	
402	2-626-907-01	GEAR(A)(S)		* 406	4-992-054-01	RUBBER, VIBRATION PROOF	
403	2-627-003-02	GEAR(B)(RP)		407	4-996-243-01	SCREW (M2), +PSW	
404	2-626-908-01	SHAFT,SLED		M101	X-2646-110-1	T.T CHASSIS ASSY(MG)(F)(SPINDLE)	
				M102	X-2625-769-1	MOTOR GEAR ASSY(MB)(RP)(SLED)	

The components identified by mark △ or dotted line with mark △ are critical for safety.
 Replace only with part number specified.

7-7. TAPE MECHANISM DECK SECTION-1 (TCM-230AWR2) (TCM-230PWR2)

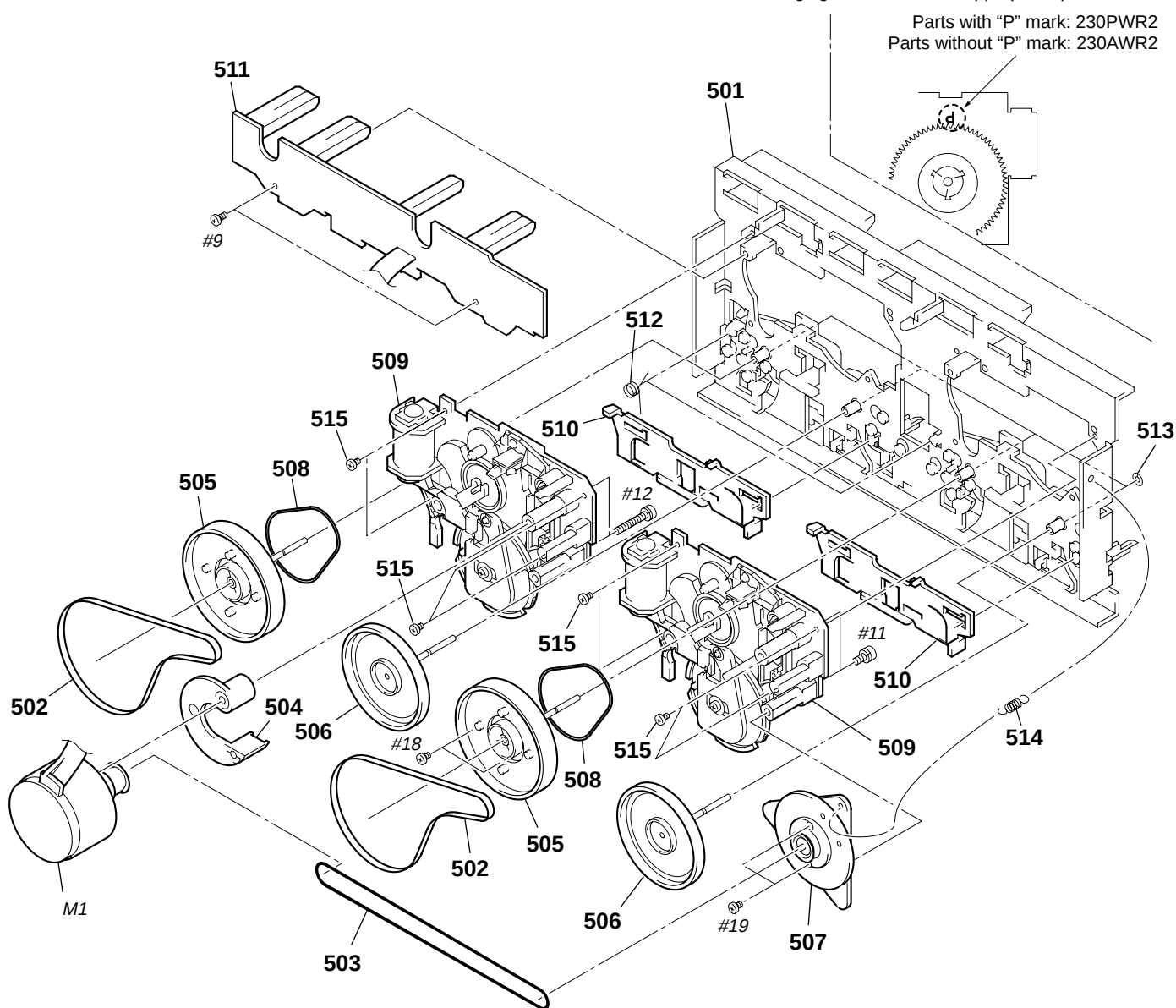
*NOTE: Two types of parts which are not interchangeable are available for the Head deck (A) ASSY and Head deck (B) ASSY.
When replacing the parts, refer to the following figure, and use the appropriate part.



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
451	3-376-464-11	SCREW(+PTT 2.6X6),GROUND POINT		459	A-2007-731-A	AUDIO BOARD,COMPLETE	
452	3-911-116-42	RIVET, PUSH		460	3-016-573-01	LEVER (EJECT PREVENTION R)	
453	3-016-574-11	SPRING (HEAD), TENSION		462	3-016-572-01	LEVER (EJECT PREVENTION L)	
454	X-3374-156-4	PINCH LEVER (REV) ASSY		HP101	A-2056-681-B	DECK (A) ASSY, HEAD(230AWR2)(*NOTE)	
455	X-3374-155-4	PINCH LEVER (FWD) ASSY		HP101	A-2056-683-B	DECK (A) ASSY, HEAD(230PWR2)(*NOTE)	
456	3-016-564-01	BASE (PINCH LEVER FWD)		HRPE101A-2056-682-B	DECK (B) ASSY, HEAD(230AWR2)(*NOTE)		
457	3-016-565-01	BASE (PINCH LEVER REV)		HRPE101A-2056-684-B	DECK (B) ASSY, HEAD(230PWR2)(*NOTE)		
458	3-026-892-01	SPRING (CASSETTE), LEAF					

7-8. TAPE MECHANISM DECK SECTION-1
(TCM-230AWR2)
(TCM-230PWR2)

*NOTE: Two types of parts which are not interchangeable are available for the mechanical block assembly. When replacing the parts, refer to the following figure, and use the appropriate part.



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
* 501	X-3374-214-3	CHASSIS ASSY, MAIN		509	A-2004-630-A	MECHANICAL BLOCK ASSY(230PWR2)(*NOTE)	
502	3-016-570-01	BELT (CAPSTAN)		510	3-016-566-01	SLIDER, REVERSE	
503	3-016-569-01	BELT (TENSION)		511	A-2007-732-A	LEAF (SW) BOARD, COMPLETE	
504	3-017-360-01	BRACKET (MOTOR)		512	3-016-575-11	SPRING, TORSION	
505	X-3376-497-2	FLYWHEEL (FWD) ASSY		513	3-019-208-01	WASHER, STOPPER	
506	X-3374-235-1	FLYWHEEL (REV) ASSY		514	3-027-453-01	SPRING (GROUND), TENSION	
507	X-3374-238-1	PULLEY ASSY, TENSION		515	3-030-823-01	SCREW (+BVTT) (2X3.5)	
508	3-024-405-01	BELT (FR2)		M1	A-2004-628-A	MOTOR ASSY, CAPSTAN	
509	A-2004-629-A	MECHANICAL BLOCK ASSY(230AWR2)(*NOTE)					

SECTION 8 ELECTRICAL PARTS LIST

AUDIO

NOTE:

When indicating parts by reference number, please include the board name.

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- CAPACITORS:
uF: μ F
- RESISTORS
All resistors are in ohms.
METAL: metal-film resistor
METAL OXIDE: Metal Oxide-film resistor
F: nonflammable
- COILS
uH: μ H
- SEMICONDUCTORS
In each case, u: μ , for example:
uA...: μ A..., uPA..., μ PA...,
uPB..., μ PB..., uPC..., μ PC...,
uPD..., μ PD...

Ref. No.	Part No.	Description	Remarks				Ref. No.	Part No.	Description	Remarks			
*	A-2007-731-A	AUDIO BOARD, COMPLETE *****							< IC >				
		< CAPACITOR >					IC601	8-759-111-44	IC UPC4570C-1				
							IC602	8-759-143-54	IC UPC1330HA				
							IC611	8-759-111-44	IC UPC4570C-1				
C301	1-162-289-31	CERAMIC	390PF	10%	50V			< COIL >					
C302	1-126-968-11	ELECT	100uF	20%	6.3V								
C303	1-162-282-31	CERAMIC	100PF	10%	50V								
C304	1-130-483-00	MYLAR	0.01uF	5%	50V		L331	1-410-780-11	INDUCTOR	27mH			
C305	1-107-715-11	ELECT	22uF	20%	16V		L431	1-410-780-11	INDUCTOR	27mH			
							L601	1-414-193-41	INDUCTOR	220uH			
							L602	1-414-193-41	INDUCTOR	220uH			
C311	1-162-289-31	CERAMIC	390PF	10%	50V			< TRANSISTOR >					
C313	1-162-282-31	CERAMIC	100PF	10%	50V								
C314	1-130-487-00	MYLAR	0.022uF	5%	50V								
C315	1-126-233-11	ELECT	22uF	20%	50V								
C331	1-137-427-11	FILM	120PF	5%	50V		Q621	8-729-142-46	TRANSISTOR	2SC2001-LK			
							Q622	8-729-142-46	TRANSISTOR	2SC2001-LK			
							Q623	8-729-801-93	TRANSISTOR	2SD1387			
C332	1-162-288-31	CERAMIC	330PF	10%	50V			< RESISTOR >					
C333	1-162-209-31	CERAMIC	27PF	5%	50V								
C401	1-162-289-31	CERAMIC	390PF	10%	50V								
C402	1-126-968-11	ELECT	100uF	20%	6.3V								
C403	1-162-282-31	CERAMIC	100PF	10%	50V		R301	1-247-881-00	CARBON	120K	5%	1/4W	
							R302	1-249-409-11	CARBON	220	5%	1/4W	
							R303	1-249-433-11	CARBON	22K	5%	1/4W	
C404	1-130-483-00	MYLAR	0.01uF	5%	50V		R304	1-247-889-00	CARBON	270K	5%	1/4W	
C405	1-107-715-11	ELECT	22uF	20%	16V		R305	1-247-858-11	CARBON	13K	5%	1/4W	
C411	1-162-289-31	CERAMIC	390PF	10%	50V								
C413	1-162-282-31	CERAMIC	100PF	10%	50V		R311	1-247-881-00	CARBON	120K	5%	1/4W	
C414	1-130-487-00	MYLAR	0.022uF	5%	50V		R312	1-247-807-31	CARBON	100	5%	1/4W	
							R314	1-247-882-11	CARBON	130K	5%	1/4W	
C415	1-126-233-11	ELECT	22uF	20%	50V		R315	1-247-850-11	CARBON	6.2K	5%	1/4W	
C431	1-137-427-11	FILM	120PF	5%	50V		R331	1-249-430-11	CARBON	12K	5%	1/4W	
C432	1-162-288-31	CERAMIC	330PF	10%	50V								
C433	1-162-209-31	CERAMIC	27PF	5%	50V		R401	1-247-881-00	CARBON	120K	5%	1/4W	
C601	1-104-396-11	ELECT	10uF	20%	16V		R402	1-249-409-11	CARBON	220	5%	1/4W	
							R403	1-249-433-11	CARBON	22K	5%	1/4W	
C602	1-104-396-11	ELECT	10uF	20%	16V		R404	1-247-889-00	CARBON	270K	5%	1/4W	
C611	1-104-396-11	ELECT	10uF	20%	16V		R405	1-247-858-11	CARBON	13K	5%	1/4W	
C612	1-104-396-11	ELECT	10uF	20%	16V								
C621	1-137-150-11	FILM	0.01uF	5%	100V		R411	1-247-881-00	CARBON	120K	5%	1/4W	
C622	1-126-961-11	ELECT	2.2uF	20%	50V		R412	1-247-807-31	CARBON	100	5%	1/4W	
							R414	1-247-882-11	CARBON	130K	5%	1/4W	
C623	1-136-155-00	FILM	0.015uF	5%	50V		R415	1-247-850-11	CARBON	6.2K	5%	1/4W	
C624	1-130-481-00	MYLAR	0.0068uF	5%	50V		R431	1-249-430-11	CARBON	12K	5%	1/4W	
C625	1-130-481-00	MYLAR	0.0068uF	5%	50V								
C627	1-124-903-11	ELECT	1uF	20%	50V								
C628	1-136-153-00	FILM	0.01uF	5%	50V		R601	1-249-409-11	CARBON	220	5%	1/4W	
							R602	1-249-409-11	CARBON	220	5%	1/4W	
							R608	1-249-409-11	CARBON	220	5%	1/4W	
C642	1-104-664-11	ELECT	47uF	20%	16V		R609	1-249-433-11	CARBON	22K	5%	1/4W	
		< CONNECTOR >					R611	1-249-409-11	CARBON	220	5%	1/4W	
CN601	1-568-834-11	SOCKET, CONNECTOR 15P					R612	1-249-409-11	CARBON	220	5%	1/4W	
							R621	1-212-851-00	FUSIBLE	5.6	5%	1/4W	
							R622	1-212-851-00	FUSIBLE	5.6	5%	1/4W	
							R623	1-249-432-11	CARBON	18K	5%	1/4W	
							R624	1-249-432-11	CARBON	18K	5%	1/4W	
							R625	1-249-429-11	CARBON	10K	5%	1/4W	

Ref. No.	Part No.	Description	Remarks
< VARIABLE RESISTOR >			
RV301	1-238-598-11	RES, ADJ, CARBON 2.2K	
RV311	1-238-598-11	RES, ADJ, CARBON 2.2K	
RV341	1-241-768-11	RES, ADJ, CARBON 220K	
RV401	1-238-598-11	RES, ADJ, CARBON 2.2K	
RV411	1-238-598-11	RES, ADJ, CARBON 2.2K	
RV441	1-241-768-11	RES, ADJ, CARBON 220K	
< TRANSFORMER >			
T621	1-423-980-11	TRANSFORMER, BIAS OSCILLATION	

*	A-4699-869-A	BD BOARD, COMPLETE	

< CAPACITOR >			
C101	1-163-038-91	CERAMIC CHIP 0.1uF	25V
C102	1-163-038-91	CERAMIC CHIP 0.1uF	25V
C103	1-164-489-11	CERAMIC CHIP 0.22uF	10% 16V
C104	1-163-003-11	CERAMIC CHIP 330PF	10% 50V
C105	1-163-023-00	CERAMIC CHIP 0.015uF	5% 50V
C106	1-110-501-11	CERAMIC CHIP 0.33uF	10% 16V
C107	1-163-989-11	CERAMIC CHIP 0.033uF	10% 25V
C108	1-164-492-11	CERAMIC CHIP 0.15uF	10% 16V
C109	1-164-161-11	CERAMIC CHIP 0.0022uF	10% 100V
C110	1-163-037-11	CERAMIC CHIP 0.022uF	10% 25V
C111	1-163-989-11	CERAMIC CHIP 0.033uF	10% 25V
C112	1-163-009-11	CERAMIC CHIP 0.001uF	10% 50V
C113	1-164-492-11	CERAMIC CHIP 0.15uF	10% 16V
C114	1-164-492-11	CERAMIC CHIP 0.15uF	10% 16V
C115	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C116	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C117	1-163-001-11	CERAMIC CHIP 220PF	10% 50V
C118	1-107-823-11	CERAMIC CHIP 0.47uF	10% 16V
C119	1-164-489-11	CERAMIC CHIP 0.22uF	10% 16V
C120	1-124-234-00	ELECT 22uF	20% 16V
C121	1-164-182-11	CERAMIC CHIP 0.0033uF	10% 50V
C122	1-126-963-11	ELECT 4.7uF	20% 50V
C123	1-163-038-91	CERAMIC CHIP 0.1uF	25V
C124	1-104-396-11	ELECT 10uF	20% 16V
C125	1-126-177-11	ELECT 100uF	20% 10V
C126	1-126-177-11	ELECT 100uF	20% 10V
C127	1-163-989-11	CERAMIC CHIP 0.033uF	10% 25V
C128	1-163-809-11	CERAMIC CHIP 0.047uF	10% 25V
C129	1-110-501-11	CERAMIC CHIP 0.33uF	10% 16V
C130	1-124-443-00	ELECT 100uF	20% 10V
C131	1-163-009-11	CERAMIC CHIP 0.001uF	10% 50V
C132	1-163-038-91	CERAMIC CHIP 0.1uF	25V
C133	1-163-038-91	CERAMIC CHIP 0.1uF	25V
C141	1-163-038-91	CERAMIC CHIP 0.1uF	25V
C142	1-164-505-11	CERAMIC CHIP 2.2uF	16V
C151	1-107-725-11	CERAMIC CHIP 0.1uF	10% 16V
C152	1-107-725-11	CERAMIC CHIP 0.1uF	10% 16V
C153	1-107-725-11	CERAMIC CHIP 0.1uF	10% 16V
C154	1-163-009-11	CERAMIC CHIP 0.001uF	10% 50V
C155	1-163-093-00	CERAMIC CHIP 10PF	5% 50V

Ref. No.	Part No.	Description	Remarks
C156	1-163-085-00	CERAMIC CHIP 2PF	50V
C157	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C158	1-163-038-91	CERAMIC CHIP 0.1uF	25V
C159	1-163-101-00	CERAMIC CHIP 22PF	5% 50V
C160	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C161	1-163-038-91	CERAMIC CHIP 0.1uF	25V
C162	1-163-038-91	CERAMIC CHIP 0.1uF	25V
C163	1-163-038-91	CERAMIC CHIP 0.1uF	25V
C164	1-163-227-11	CERAMIC CHIP 10PF	0.5PF 50V
C165	1-163-227-11	CERAMIC CHIP 10PF	0.5PF 50V
C166	1-124-443-00	ELECT 100uF	20% 10V
C167	1-163-038-91	CERAMIC CHIP 0.1uF	25V
C171	1-163-038-91	CERAMIC CHIP 0.1uF	25V
C172	1-126-177-11	ELECT 100uF	20% 10V
C173	1-124-589-11	ELECT 47uF	20% 16V
C174	1-163-038-91	CERAMIC CHIP 0.1uF	25V
C175	1-163-038-91	CERAMIC CHIP 0.1uF	25V
C181	1-104-664-11	ELECT 47uF	20% 16V
C182	1-104-664-11	ELECT 47uF	20% 16V
C183	1-163-003-11	CERAMIC CHIP 330PF	10% 50V
C184	1-163-003-11	CERAMIC CHIP 330PF	10% 50V
< CONNECTOR >			
CN101	1-770-173-11	CONNECTOR, FFC/FPC 16P	
CN102	1-691-894-21	SOCKET, CONNECTOR 16P	
* CN103	1-568-852-11	SOCKET, CONNECTOR 9P	
< DIODE >			
D151	8-719-911-19	DIODE 1SS119	
D151	8-719-991-33	DIODE 1SS133T-77	
< IC >			
IC101	8-759-449-64	IC LA9240M	
IC102	8-759-449-65	IC LC78622E	
IC103	8-759-449-66	IC LA6541	
IC104	8-759-428-57	IC LC89170M	
< JUMPER RESISTOR >			
JW1	1-216-295-91	SHORT 0	
JW2	1-216-295-91	SHORT 0	
JW4	1-216-295-91	SHORT 0	
JW5	1-216-295-91	SHORT 0	
JW6	1-216-295-91	SHORT 0	
JW7	1-216-295-91	SHORT 0	
JW8	1-216-295-91	SHORT 0	
JW9	1-216-295-91	SHORT 0	
JW10	1-216-295-91	SHORT 0	
< TRANSISTOR >			
Q101	8-729-119-78	TRANSISTOR 2SC403SP-51	
Q102	8-729-119-78	TRANSISTOR 2SC403SP-51	
Q103	8-729-119-76	TRANSISTOR 2SA1175-HFE	

The components identified by mark Δ or dotted line with mark Δ are critical for safety.
Replace only with part number specified.

BD

CD DOOR

CD LED

CD MOTOR

DISC SENSOR (R)

Ref. No.	Part No.	Description	Remarks			Ref. No.	Part No.	Description	Remarks		
< RESISTOR >						R171	1-216-025-91	RES,CHIP	100	5%	1/10W
R101	1-216-097-91	RES,CHIP	100K	5%	1/10W	R172	1-216-025-91	RES,CHIP	100	5%	1/10W
R102	1-216-093-00	METAL CHIP	68K	5%	1/10W	R173	1-216-025-91	RES,CHIP	100	5%	1/10W
R103	1-216-093-00	METAL CHIP	68K	5%	1/10W	R174	1-216-025-91	RES,CHIP	100	5%	1/10W
R104	1-216-093-00	METAL CHIP	68K	5%	1/10W	R181	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R105	1-216-093-00	METAL CHIP	68K	5%	1/10W	R182	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R106	1-216-097-91	RES,CHIP	100K	5%	1/10W	R183	1-216-073-00	METAL CHIP	10K	5%	1/10W
R107	1-216-097-91	RES,CHIP	100K	5%	1/10W	R184	1-216-073-00	METAL CHIP	10K	5%	1/10W
R108	1-216-068-00	METAL CHIP	6.2K	5%	1/10W	R191	1-216-025-91	RES,CHIP	100	5%	1/10W
R109	1-216-076-00	METAL CHIP	13K	5%	1/10W	R192	1-216-041-00	METAL CHIP	470	5%	1/10W
R110	1-216-093-00	METAL CHIP	68K	5%	1/10W	R193	1-216-041-00	METAL CHIP	470	5%	1/10W
R111	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	R194	1-216-025-91	RES,CHIP	100	5%	1/10W
R112	1-216-101-00	METAL CHIP	150K	5%	1/10W	R195	1-216-041-00	METAL CHIP	470	5%	1/10W
R113	1-216-099-00	METAL CHIP	120K	5%	1/10W	R196	1-216-025-91	RES,CHIP	100	5%	1/10W
R114	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	R197	1-216-025-91	RES,CHIP	100	5%	1/10W
R115	1-216-085-00	METAL CHIP	33K	5%	1/10W	< SWITCH >					
R116	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	S101	1-572-085-11	SWITCH, LEAF (LIMIT SW)			
R117	1-216-085-00	METAL CHIP	33K	5%	1/10W	< VIBRATOR >					
R118	1-216-081-00	METAL CHIP	22K	5%	1/10W	X101	1-577-576-21	VIBRATOR, CRYSTAL 16.93MHz			
R119	1-216-064-00	METAL CHIP	4.3K	5%	1/10W	*****					
R120	1-216-085-00	METAL CHIP	33K	5%	1/10W	*	1-669-650-11	CD DOOR BOARD	*****		
R121	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	< SWITCH >					
R122	1-216-083-00	METAL CHIP	27K	5%	1/10W	S413	1-762-386-11	SWITCH, PUSH (CD DOOR)			
R123	1-216-099-00	METAL CHIP	120K	5%	1/10W	*****					
R124	1-216-093-00	METAL CHIP	68K	5%	1/10W	*	1-669-645-11	CD LED BOARD	*****		
R125	1-216-089-91	RES,CHIP	47K	5%	1/10W	< DIODE >					
R126	1-216-037-00	METAL CHIP	330	5%	1/10W	D637	8-719-058-64	DIODE SEL5823A			
R127	1-216-089-91	RES,CHIP	47K	5%	1/10W	D638	8-719-058-64	DIODE SEL5823A			
R128	1-216-077-00	METAL CHIP	15K	5%	1/10W	D639	8-719-058-03	DIODE SEL5423E			
R129	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	D640	8-719-058-04	DIODE SEL5223S			
R130	1-216-113-00	METAL CHIP	470K	5%	1/10W	< RESISTOR >					
R131	1-216-113-00	METAL CHIP	470K	5%	1/10W	R653	1-249-402-11	CARBON	56	5%	1/4W F
R132	1-216-065-91	RES,CHIP	4.7K	5%	1/10W	R654	1-249-402-11	CARBON	56	5%	1/4W F
R133	1-216-113-00	METAL CHIP	470K	5%	1/10W	*****					
R134	1-216-113-00	METAL CHIP	470K	5%	1/10W	*	1-663-974-11	CD MOTOR BOARD	*****		
R135	1-216-065-91	RES,CHIP	4.7K	5%	1/10W	< CONNECTOR >					
R136	1-216-073-00	METAL CHIP	10K	5%	1/10W	CN61	1-506-469-11	PIN, CONNECTOR 4P			
R137	1-216-009-00	METAL CHIP	22	5%	1/10W	M61	X-4948-434-1	MOTOR ASSY (LOADING)			
R138	1-216-089-91	RES,CHIP	47K	5%	1/10W	M62	X-4948-434-1	MOTOR ASSY (TABLE)			
R141	1-216-083-00	METAL CHIP	27K	5%	1/10W	*****					
R151	1-216-045-00	METAL CHIP	680	5%	1/10W	*	1-663-972-11	DISC SENSOR (R) BOARD	*****		
R152	1-216-093-00	METAL CHIP	68K	5%	1/10W	< TRANSISTOR >					
R153	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	Q51	8-729-926-31	PHOTO TRANSISTOR PT483F1S			
R154	1-216-085-00	METAL CHIP	33K	5%	1/10W	*****					
R155	1-216-089-91	RES,CHIP	47K	5%	1/10W						
R156	1-216-081-00	METAL CHIP	22K	5%	1/10W	*	4-990-669-01	HOLDER (SENSOR)			
R157	1-216-077-00	METAL CHIP	15K	5%	1/10W	7-685-132-19 SCREW +BTP 2.6X5 TYPE2 N-S					
R158	1-216-049-91	RES,CHIP	1K	5%	1/10W	< TRANSISTOR >					
R159	1-216-083-00	METAL CHIP	27K	5%	1/10W						
R160	1-216-037-00	METAL CHIP	330	5%	1/10W						
R161	1-216-073-00	METAL CHIP	10K	5%	1/10W						
R162	1-216-037-00	METAL CHIP	330	5%	1/10W						
R163	1-216-049-91	RES,CHIP	1K	5%	1/10W						
R164	1-216-065-91	RES,CHIP	4.7K	5%	1/10W						
R165	1-216-025-91	RES,CHIP	100	5%	1/10W						
R166	1-216-025-91	RES,CHIP	100	5%	1/10W						

DISC SENSOR (S)	DOOR LED	DOOR SW	FUNC	HP/MIC	LEAF SW
------------------------	-----------------	----------------	-------------	---------------	----------------

Ref. No.	Part No.	Description	Remarks
*	1-663-973-11	DISC SENSOR (S) BOARD *****	
*	4-976-473-01	HOLDER (LED-S) < CONNECTOR >	
* CN53	1-568-951-11	PIN, CONNECTOR 2P < DIODE >	
D51	8-719-055-84	DIODE GL-528VS1 < RESISTOR >	
R54	1-249-409-11	CARBON 220 5% 1/4W F *****	
	1-674-316-11	DOOR LED BOARD ***** < DIODE >	
D633	8-719-075-49	DIODE FY3864X-J300K *****	
*	1-663-975-11	DOOR SW BOARD ***** < CONNECTOR >	
* CN54	1-568-941-11	PIN, CONNECTOR 3P < SWITCH >	
S51	1-571-958-11	SWITCH, PUSH (1 KEY)(UP)	
S52	1-571-958-11	SWITCH, PUSH (1 KEY)(DOWN) *****	
	A-4426-605-A	FUNC BOARD, COMPLETE ***** < CONNECTOR >	
CN604	1-506-481-11	PIN, CONNECTOR 2P < DIODE >	
D619	8-719-074-81	DIODE MAA3864X-J300K(CD PLUSE ONE)	
D620	8-719-074-80	DIODE MVR3864X-J300K(1)	
D621	8-719-074-80	DIODE MVR3864X-J300K(2)	
D622	8-719-074-80	DIODE MVR3864X-J300K(3)	
D623	8-719-074-80	DIODE MVR3864X-J300K(4)	
D624	8-719-074-80	DIODE MVR3864X-J300K(5) < RESISTOR >	
R639	1-216-027-00	METAL CHIP 120 5% 1/10W	
R640	1-216-029-00	METAL CHIP 150 5% 1/10W	
R641	1-216-029-00	METAL CHIP 150 5% 1/10W	
R642	1-216-029-00	METAL CHIP 150 5% 1/10W	
R643	1-216-029-00	METAL CHIP 150 5% 1/10W	
R644	1-216-029-00	METAL CHIP 150 5% 1/10W	
R652	1-216-025-91	RES,CHIP 100 5% 1/10W	
R652	1-216-029-00	METAL CHIP 150 5% 1/10W	
R686	1-216-033-00	METAL CHIP 220 5% 1/10W	
R687	1-216-035-00	METAL CHIP 270 5% 1/10W	

Ref. No.	Part No.	Description	Remarks
R688	1-216-039-00	METAL CHIP 390 5% 1/10W	
R689	1-216-041-00	METAL CHIP 470 5% 1/10W	
R690	1-216-045-00	METAL CHIP 680 5% 1/10W	
R691	1-216-047-91	RES,CHIP 820 5% 1/10W	
R692	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R693	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R694	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R695	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R696	1-216-065-91	RES,CHIP 4.7K 5% 1/10W	
R697	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R698	1-216-073-00	METAL CHIP 10K 5% 1/10W < SWITCH >	
S631	1-762-875-21	SWITCH, KEYBOARD(FUNCTION)	
S632	1-762-875-21	SWITCH, KEYBOARD(CONTINUE)	
S633	1-762-875-21	SWITCH, KEYBOARD(SHUFFLE)	
S634	1-762-875-21	SWITCH, KEYBOARD(PROGRAM)	
S635	1-762-875-21	SWITCH, KEYBOARD(REPEAT)	
S636	1-762-875-21	SWITCH, KEYBOARD(CD PAUSE ONE)	
S637	1-762-875-21	SWITCH, KEYBOARD(LOOP)	
S638	1-762-875-21	SWITCH, KEYBOARD(FLASH)	
S639	1-762-875-21	SWITCH, KEYBOARD(GROUP ENTRY)	
S640	1-762-875-21	SWITCH, KEYBOARD(1) *****	
S641	1-762-875-21	SWITCH, KEYBOARD(2)	
S642	1-762-875-21	SWITCH, KEYBOARD(3)	
S643	1-762-875-21	SWITCH, KEYBOARD(4)	
S644	1-762-875-21	SWITCH, KEYBOARD(5) *****	
	1-674-315-11	HP/MICBOARD ***** < JACK >	
J781	1-793-096-11	JACK (LARGE TYPE) (PHONES) *****	
*	A-2007-732-A	LEAF SW BOARD, COMPLETE ***** < CAPACITOR >	
C1001	1-124-286-00	ELECT 33uF 20% 10V < CONNECTOR >	
CN1001	1-568-860-11	SOCKET, CONNECTOR 17P < DIODE >	
D1001	8-719-911-19	DIODE 1SS119	
D1002	8-719-911-19	DIODE 1SS119 < IC >	
IC1001	8-749-014-38	IC PHOTO INTERRUPTER SG-264	
IC1002	8-749-014-38	IC PHOTO INTERRUPTER SG-264 < TRANSISTOR >	
Q1001	8-729-900-65	TRANSISTOR DTA144ES	

Ref. No.	Part No.	Description				Remarks	Ref. No.	Part No.	Description				Remarks
< RESISTOR >							C161	1-137-195-11	FILM	0.56uF	5%	50V	
							C162	1-136-158-00	FILM	0.027uF	5%	50V	
R907	1-247-879-11	CARBON	100K	5%	1/4W		C163	1-136-167-00	FILM	0.15uF	5%	50V	
R1001	1-249-409-11	CARBON	220	5%	1/4W	F	C164	1-130-480-00	MYLAR	0.0056uF	5%	50V	
R1002	1-249-409-11	CARBON	220	5%	1/4W	F	C165	1-130-489-00	MYLAR	0.033uF	5%	50V	
R1003	1-249-414-11	CARBON	560	5%	1/4W	F							
R1004	1-247-834-11	CARBON	1.3K	5%	1/4W		C166	1-130-473-00	MYLAR	0.0015uF	5%	50V	
							C167	1-136-153-00	FILM	0.01uF	5%	50V	
R1005	1-247-818-11	CARBON	300	5%	1/4W		C168	1-162-288-31	CERAMIC	330PF	10%	50V	
R1006	1-247-864-11	CARBON	24K	5%	1/4W		C169	1-130-479-00	MYLAR	0.0047uF	5%	50V	
R1007	1-247-856-00	CARBON	11K	5%	1/4W		C170	1-136-153-00	FILM	0.01uF	5%	50V	
R1008	1-249-417-11	CARBON	1K	5%	1/4W	F							
< VARIABLE RESISTOR >							C171	1-126-964-11	ELECT	10uF	20%	50V	
							C172	1-162-291-31	CERAMIC	560PF	10%	50V	
RV1001	1-241-785-11	RES, ADJ, CARBON 10K					C173	1-136-165-00	FILM	0.1uF	5%	50V	
RV1002	1-241-785-11	RES, ADJ, CARBON 10K					C174	1-136-165-00	FILM	0.1uF	5%	50V	
							C175	1-126-964-11	ELECT	10uF	20%	50V	
< SWITCH >							C176	1-136-495-11	FILM	0.068uF	5%	50V	
							C177	1-136-153-00	FILM	0.01uF	5%	50V	
S1001	1-570-953-11	SWITCH, PUSH (1 KEY) (A PLAY)					C191	1-126-964-11	ELECT	10uF	20%	50V	
S1002	1-570-953-11	SWITCH, PUSH (1 KEY) (B PLAY)					C192	1-162-292-31	CERAMIC	680PF	10%	50V	
S1003	1-771-333-11	SWITCH, LEAF (A HALF)					C193	1-126-964-11	ELECT	10uF	20%	50V	
S1004	1-771-205-11	SWITCH, LEAF (A 120/70)											
S1005	1-771-205-11	SWITCH, LEAF (REC A)					C194	1-162-286-21	CERAMIC	220PF	10%	50V	
							C195	1-162-306-11	CERAMIC	0.01uF	30%	16V	
S1006	1-771-333-11	SWITCH, LEAF (B HALF)					C196	1-162-306-11	CERAMIC	0.01uF	30%	16V	
S1008	1-771-205-11	SWITCH, LEAF (B 120/70)					C301	1-126-960-11	ELECT	1uF	20%	50V	
S1009	1-771-205-11	SWITCH, LEAF (REC B)					C302	1-130-479-00	MYLAR	0.0047uF	5%	50V	

	A-4426-587-A	MAINBOARD, COMPLETE (US)					C303	1-136-165-00	FILM	0.1uF	5%	50V	
		*****					C304	1-136-165-00	FILM	0.1uF	5%	50V	
	A-4426-588-A	MAINBOARD, COMPLETE (E)					C305	1-126-964-11	ELECT	10uF	20%	50V	
		*****					C306	1-126-960-11	ELECT	1uF	20%	50V	
		< CAPACITOR >					C307	1-126-959-11	ELECT	0.47uF	20%	50V	
C101	1-162-286-21	CERAMIC	220PF	10%	50V		C308	1-126-964-11	ELECT	10uF	20%	50V	
C102	1-162-286-21	CERAMIC	220PF	10%	50V		C309	1-136-173-00	FILM	0.47uF	5%	50V	
C104	1-126-934-11	ELECT	220uF	20%	16V		C310	1-162-290-31	CERAMIC	470PF	10%	50V	
C111	1-137-195-11	FILM	0.56uF	5%	50V		C311	1-126-964-11	ELECT	10uF	20%	50V	
C112	1-136-158-00	FILM	0.027uF	5%	50V		C312	1-126-959-11	ELECT	0.47uF	20%	50V	
C113	1-136-167-00	FILM	0.15uF	5%	50V		C313	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C114	1-130-480-00	MYLAR	0.0056uF	5%	50V		C314	1-126-964-11	ELECT	10uF	20%	50V	
C115	1-130-489-00	MYLAR	0.033uF	5%	50V		C315	1-126-963-11	ELECT	4.7uF	20%	50V	
C116	1-130-473-00	MYLAR	0.0015uF	5%	50V		C316	1-104-665-11	ELECT	100uF	20%	10V	
C117	1-136-153-00	FILM	0.01uF	5%	50V		C317	1-104-665-11	ELECT	100uF	20%	10V	
C118	1-162-288-31	CERAMIC	330PF	10%	50V		C320	1-162-290-31	CERAMIC	470PF	10%	50V	
C119	1-130-479-00	MYLAR	0.0047uF	5%	50V		C331	1-164-159-21	CERAMIC	0.1uF		50V	
C120	1-136-153-00	FILM	0.01uF	5%	50V		C332	1-164-159-21	CERAMIC	0.1uF		50V	
C121	1-126-964-11	ELECT	10uF	20%	50V		C351	1-126-960-11	ELECT	1uF	20%	50V	
C122	1-162-291-31	CERAMIC	560PF	10%	50V		C352	1-130-479-00	MYLAR	0.0047uF	5%	50V	
C123	1-136-165-00	FILM	0.1uF	5%	50V		C353	1-136-165-00	FILM	0.1uF	5%	50V	
C124	1-136-165-00	FILM	0.1uF	5%	50V		C354	1-136-165-00	FILM	0.1uF	5%	50V	
C125	1-126-964-11	ELECT	10uF	20%	50V		C355	1-126-964-11	ELECT	10uF	20%	50V	
C131	1-104-664-11	ELECT	47uF	20%	16V		C356	1-126-960-11	ELECT	1uF	20%	50V	
C132	1-104-664-11	ELECT	47uF	20%	16V		C357	1-126-959-11	ELECT	0.47uF	20%	50V	
C135	1-126-964-11	ELECT	10uF	20%	50V		C358	1-126-964-11	ELECT	10uF	20%	50V	
C136	1-164-159-21	CERAMIC	0.1uF		50V		C359	1-136-173-00	FILM	0.47uF	5%	50V	
C141	1-126-959-11	ELECT	0.47uF	20%	50V		C401	1-104-665-11	ELECT	100uF	20%	10V	
C151	1-162-286-21	CERAMIC	220PF	10%	50V		C402	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C152	1-162-286-21	CERAMIC	220PF	10%	50V		C403	1-162-306-11	CERAMIC	0.01uF	30%	16V	

MAIN

Ref. No.	Part No.	Description			Remarks
C405	1-162-306-11	CERAMIC	0.01uF	30%	16V
C406	1-104-665-11	ELECT	100uF	20%	10V
C410	1-104-665-11	ELECT	100uF	20%	10V
C411	1-110-489-11	CAPACITOR	1F		5.5V
C412	1-164-159-21	CERAMIC	0.1uF		50V
C413	1-162-294-31	CERAMIC	0.001uF	10%	50V
C442	1-124-252-00	ELECT	0.33uF	20%	50V
C443	1-130-477-00	MYLAR	0.0033uF	5%	50V
C444	1-130-477-00	MYLAR	0.0033uF	5%	50V
C451	1-126-934-11	ELECT	220uF	20%	10V
C453	1-164-159-21	CERAMIC	0.1uF		50V
C455	1-164-159-11	CERAMIC	0.1uF		50V
C456	1-164-159-21	CERAMIC	0.1uF		50V
C457	1-164-159-21	CERAMIC	0.1uF		50V
C458	1-164-159-21	CERAMIC	0.1uF		50V
C460	1-164-159-21	CERAMIC	0.1uF		50V
C461	1-126-964-11	ELECT	10uF	20%	50V
C462	1-162-294-31	CERAMIC	0.001uF	10%	50V
C463	1-162-294-31	CERAMIC	0.001uF	10%	50V
C492	1-124-252-00	ELECT	0.33uF	20%	50V
C493	1-130-477-00	MYLAR	0.0033uF	5%	50V
C494	1-130-477-00	MYLAR	0.0033uF	5%	50V
C499	1-161-494-00	CERAMIC	0.022uF	25V	
C501	1-104-664-11	ELECT	47uF	20%	10V
C502	1-164-159-21	CERAMIC	0.1uF		50V
C503	1-136-173-00	FILM	0.47uF	5%	50V
C504	1-126-926-11	ELECT	1000uF	20%	10V
C505	1-162-306-11	CERAMIC	0.01uF	30%	16V
C506	1-136-165-00	FILM	0.1uF	5%	50V
C507	1-164-159-21	CERAMIC	0.1uF		50V
C508	1-104-665-11	ELECT	100uF	20%	10V
C509	1-164-027-11	CERAMIC	22PF	5%	50V
C510	1-164-027-11	CERAMIC	22PF	5%	50V
C512	1-164-159-11	CERAMIC	0.1uF		50V
C513	1-136-165-00	FILM	0.1uF	5%	50V
C571	1-109-889-11	ELECT	1uF	20%	50V
C701	1-136-495-11	FILM	0.068uF	5%	50V
C702	1-136-495-11	FILM	0.068uF	5%	50V
C731	1-126-934-11	ELECT	220uF	20%	10V
C732	1-104-665-11	ELECT	100uF	20%	10V
C733	1-126-960-11	ELECT	1uF	20%	50V
C734	1-104-665-11	ELECT	100uF	20%	10V
C751	1-136-495-11	FILM	0.068uF	5%	50V
C752	1-136-495-11	FILM	0.068uF	5%	50V
C756	1-126-963-11	ELECT	4.7uF	20%	50V
C757	1-164-159-21	CERAMIC	0.1uF		50V
C901	1-136-165-00	FILM	0.1uF	5%	50V
C902	1-128-548-11	ELECT	4700uF	20%	25V
C903	1-104-666-11	ELECT	220uF	20%	25V
C904	1-104-664-11	ELECT	47uF	20%	16V
C905	1-126-940-11	ELECT	330uF	20%	16V
C908	1-162-301-11	CERAMIC	0.0015uF	30%	16V
C909	1-126-964-11	ELECT	10uF	20%	50V
C910	1-104-665-11	ELECT	100uF	20%	10V
C911	1-126-964-11	ELECT	10uF	20%	50V
C912	1-126-926-11	ELECT	1000uF	20%	10V
C913	1-126-943-11	ELECT	2200uF	20%	25V
C914	1-126-964-11	ELECT	10uF	20%	50V
C915	1-126-767-11	ELECT	1000uF	20%	16V
C916	1-126-964-11	ELECT	10uF	20%	50V

Ref. No.	Part No.	Description			Remarks
C917	1-126-768-11	ELECT	2200uF	20%	16V
C918	1-126-968-11	ELECT	100uF	20%	50V
C919	1-126-968-11	ELECT	100uF	20%	50V
C921	1-126-947-11	ELECT	47uF	20%	35V
C922	1-164-159-21	CERAMIC	0.1uF		50V
C923	1-164-159-21	CERAMIC	0.1uF		50V
C924	1-126-934-11	ELECT	220uF	20%	10V
C951	1-136-165-00	FILM	0.1uF	5%	50V
C952	1-126-943-11	ELECT	2200uF	20%	25V
C953	1-104-666-11	ELECT	220uF	20%	25V
C955	1-126-940-11	ELECT	330uF	20%	16V
< CONNECTOR >					
* CN101	1-564-506-11	PLUG, CONNECTOR 3P			
* CN102	1-568-832-11	SOCKET, CONNECTOR 13P			
CN106	1-784-776-41	CONNECTOR, FFC 15P			
CN107	1-784-778-41	CONNECTOR, FFC 17P			
* CN108	1-568-954-11	PIN, CONNECTOR 5P			
* CN110	1-564-506-11	PLUG, CONNECTOR 3P			
* CN301	1-568-449-11	HO(US)ING, CONNECTOR(PC BOARD)3P			
CN401	1-784-738-41	CONNECTOR, FFC 16P			
CN402	1-784-731-41	CONNECTOR, FFC 9P			
* CN403	1-568-951-11	PIN, CONNECTOR 2P			
* CN451	1-568-955-11	PIN, CONNECTOR 6P			
* CN453	1-568-951-11	PIN, CONNECTOR 2P			
CN454	1-506-468-11	PIN, CONNECTOR 3P			
CN461	1-506-469-11	PIN, CONNECTOR 4P			
CN501	1-784-770-41	CONNECTOR, FFC 9P			
CN607	1-506-481-11	PIN, CONNECTOR 2P			
< DIODE >					
D141	8-719-991-33	DIODE 1SS133T-77			
D333	8-719-991-33	DIODE 1SS133T-77			
D401	8-719-024-99	DIODE 11ES2-NTA2B			
D402	8-719-991-33	DIODE 1SS133T-77			
D411	8-719-991-33	DIODE 1SS133T-77			
D501	8-719-024-99	DIODE 11ES2-NTA2B			
D502	8-719-024-99	DIODE 11ES2-NTA2B			
D503	8-719-991-33	DIODE 1SS133T-77			
D504	8-719-991-33	DIODE 1SS133T-77			
D505	8-719-991-33	DIODE 1SS133T-77			
D506	8-719-991-33	DIODE 1SS133T-77			
D701	8-719-991-33	DIODE 1SS133T-77			
D702	8-719-991-33	DIODE 1SS133T-77			
D703	8-719-024-99	DIODE 11ES2-NTA2B			
D704	8-719-024-99	DIODE 11ES2-NTA2B			
D705	8-719-024-99	DIODE 11ES2-NTA2B			
D731	8-719-991-33	DIODE 1SS133T-77			
D732	8-719-991-33	DIODE 1SS133T-77			
D733	8-719-991-33	DIODE 1SS133T-77			
D751	8-719-991-33	DIODE 1SS133T-77			
D901	8-719-024-99	DIODE 11ES2-NTA2B			
D902	8-719-024-99	DIODE 11ES2-NTA2B			
D903	8-719-024-99	DIODE 11ES2-NTA2B			
D904	8-719-024-99	DIODE 11ES2-NTA2B			
D905	8-719-933-36	DIODE HZS6B1LTA			

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
D906	8-719-991-33	DIODE 1SS133T-77		Q163	8-729-141-30	TRANSISTOR 2SC3623ATP-LK	
D907	8-719-024-99	DIODE 11ES2-NTA2B		Q191	8-729-141-30	TRANSISTOR 2SC3623ATP-LK	
D908	8-719-024-99	DIODE 11ES2-NTA2B		Q331	8-729-116-59	TRANSISTOR 2SB1068TP	
D909	8-719-024-99	DIODE 11ES2-NTA2B		Q332	8-729-029-66	TRANSISTOR DTC114ESA-TP	
D910	8-719-024-99	DIODE 11ES2-NTA2B		Q333	8-729-116-59	TRANSISTOR 2SB1068TP	
D911	8-719-934-25	DIODE HZS33-1LTA		Q334	8-729-029-66	TRANSISTOR DTC114ESA-TP	
D912	8-719-921-44	DIODE MTZJ-T-72-5.1C		Q335	8-729-029-66	TRANSISTOR DTC114ESA-TP	
D913	8-719-991-33	DIODE 1SS133T-77		Q336	8-729-116-59	TRANSISTOR 2SB1068TP	
D914	8-719-024-99	DIODE 11ES2-NTA2B		Q337	8-729-045-21	TRANSISTOR 2SD1513TP-LK	
D917	8-719-991-33	DIODE 1SS133T-77		Q338	8-729-900-63	TRANSISTOR BN1F4M-TP	
< EARTH >				Q339	8-729-029-66	TRANSISTOR DTC114ESA-TP	
EP401	1-537-771-21	TERMINAL BOARD, GROUND		Q340	8-729-116-59	TRANSISTOR 2SB1068TP	
EP901	1-537-771-21	TERMINAL BOARD, GROUND		Q341	8-729-045-21	TRANSISTOR 2SD1513TP-LK	
< FERRITE BEAD >				Q342	8-729-900-63	TRANSISTOR BN1F4M-TP	
FB401	1-412-473-41	INDUCTOR 0UH		Q343	8-729-029-66	TRANSISTOR DTC114ESA-TP	
FB402	1-412-473-41	INDUCTOR 0UH		Q411	8-729-900-36	TRANSISTOR BA1F4M-TP	
FB403	1-412-473-41	INDUCTOR 0UH		Q501	8-729-620-05	TRANSISTOR 2SC2603TP-EF	
FB404	1-412-473-41	INDUCTOR 0UH		Q571	8-729-900-63	TRANSISTOR BN1F4M-TP	
FB405	1-412-473-41	INDUCTOR 0UH		Q572	8-729-119-76	TRANSISTOR 2SA1115TP-EF	
FB406	1-412-473-41	INDUCTOR 0UH		Q575	8-729-620-05	TRANSISTOR 2SC2603TP-EF	
FB407	1-412-473-41	INDUCTOR 0UH		Q701	8-729-119-76	TRANSISTOR 2SA1115TP-EF	
FB408	1-412-473-41	INDUCTOR 0UH		Q702	8-729-620-05	TRANSISTOR 2SC2603TP-EF	
FB409	1-412-473-41	INDUCTOR 0UH		Q703	8-729-119-76	TRANSISTOR 2SA1115TP-EF	
< IC >				Q704	8-729-111-29	TRANSISTOR 2SD1616-TP-LK	
IC101	8-759-495-24	IC M62442FP-TP		Q731	8-729-900-63	TRANSISTOR BN1F4M-TP	
IC191	8-759-634-51	IC M5218AP		Q732	8-729-900-63	TRANSISTOR BN1F4M-TP	
IC301	8-759-495-26	IC HA12215F		Q733	8-729-620-05	TRANSISTOR 2SC2603TP-EF	
IC401	8-752-896-35	IC CXP84632-031Q		Q901	8-729-209-15	TRANSISTOR 2SD2012	
IC402	8-749-923-04	IC TOTX178A		Q902	8-729-620-05	TRANSISTOR 2SC2603TP-EF	
IC411	8-759-463-99	IC M5M5256DFP-70XL		Q903	8-729-620-05	TRANSISTOR 2SC2603TP-EF	
IC441	8-759-634-51	IC M5218AP		Q905	8-729-040-20	TRANSISTOR RT1P137L-TP	
IC461	8-759-356-03	IC BA6780		Q906	8-729-422-57	TRANSISTOR BN1A4M-TP	
IC501	8-759-574-49	IC uPD780016AYGF-024-3BA		Q907	8-729-040-20	TRANSISTOR RT1P137L-TP	
IC502	8-759-635-63	IC M51943BSL-TP		Q908	8-729-620-05	TRANSISTOR 2SC2603TP-EF	
IC701	8-759-111-68	IC uPC1237HA		Q910	8-729-030-19	TRANSISTOR 2SB1640(TP)	
IC901	8-759-604-86	IC M5F7807L		Q911	8-729-141-83	TRANSISTOR 2SB1375	
IC902	8-759-231-53	IC M5F7805L		Q912	8-729-119-76	TRANSISTOR 2SA1115TP-EF	
IC903	8-759-391-87	IC BA78M12P		Q913	8-729-620-05	TRANSISTOR 2SC2603TP-EF	
IC904	8-759-604-38	IC M5F78M10L		Q914	8-729-620-05	TRANSISTOR 2SC2603TP-EF	
< JACK >				Q915	8-729-620-05	TRANSISTOR 2SC2603TP-EF	
J101	1-573-028-31	JACK, PIN 4P (VIDEO/MD AUDIO)		Q916	8-729-119-76	TRANSISTOR 2SA1115TP-EF	
J191	1-770-377-31	JACK, PIN 1P (SUPER WOOFER)		Q951	8-729-141-83	TRANSISTOR 2SB1375	
< COIL >				Q952	8-729-119-76	TRANSISTOR 2SA1115TP-EF	
L101	1-410-521-11	INDUCTOR 100uH		< RESISTOR >			
L401	1-410-509-11	INDUCTOR 10uH		R101	1-249-417-11	CARBON 1K 5%	1/4W F
L402	1-410-509-11	INDUCTOR 10uH		R102	1-249-417-11	CARBON 1K 5%	1/4W F
L457	1-410-509-11	INDUCTOR 10uH		R111	1-247-826-00	CARBON 620 5%	1/4W
L501	1-410-509-11	INDUCTOR 10uH		R112	1-247-903-00	CARBON 1M 5%	1/4W
L701	1-420-872-00	COIL, AIR-CORE		R113	1-247-903-00	CARBON 1M 5%	1/4W
L751	1-420-872-00	COIL, AIR-CORE		R114	1-249-419-11	CARBON 1.5K 5%	1/4W F
< TRANSISTOR >				R115	1-247-863-91	CARBON 22K 5%	1/4W
Q111	8-729-620-05	TRANSISTOR 2SC2603TP-EF		R116	1-247-887-00	CARBON 220K 5%	1/4W
Q112	8-729-620-05	TRANSISTOR 2SC2603TP-EF		R117	1-249-429-11	CARBON 10K 5%	1/4W
Q113	8-729-141-30	TRANSISTOR 2SC3623ATP-LK		R118	1-249-437-11	CARBON 47K 5%	1/4W
Q161	8-729-620-05	TRANSISTOR 2SC2603TP-EF		R119	1-249-421-11	CARBON 2.2K 5%	1/4W F
Q162	8-729-620-05	TRANSISTOR 2SC2603TP-EF		R120	1-249-441-11	CARBON 100K 5%	1/4W
				R121	1-249-429-11	CARBON 10K 5%	1/4W
				R123	1-249-437-11	CARBON 47K 5%	1/4W
				R124	1-249-421-11	CARBON 2.2K 5%	1/4W F

MAIN

Ref. No.	Part No.	Description			Remarks	Ref. No.	Part No.	Description			Remarks
R125	1-249-429-11	CARBON	10K	5%	1/4W	R331	1-249-425-11	CARBON	4.7K	5%	1/4W F
R128	1-249-421-11	CARBON	2.2K	5%	1/4W F	R332	1-249-415-11	CARBON	680	5%	1/4W F
R131	1-247-807-31	CARBON	100	5%	1/4W	R333	1-249-421-11	CARBON	2.2K	5%	1/4W F
R132	1-247-807-31	CARBON	100	5%	1/4W	R334	1-249-415-11	CARBON	680	5%	1/4W F
R133	1-247-807-31	CARBON	100	5%	1/4W	R335	1-249-421-11	CARBON	2.2K	5%	1/4W F
R141	1-247-863-91	CARBON	22K	5%	1/4W	R336	1-249-437-11	CARBON	47K	5%	1/4W
R142	1-247-863-91	CARBON	22K	5%	1/4W	R337	1-249-411-11	CARBON	330	5%	1/4W
R143	1-249-417-11	CARBON	1K	5%	1/4W F	R338	1-249-411-11	CARBON	330	5%	1/4W
R144	1-249-441-11	CARBON	100K	5%	1/4W	R339	1-249-437-11	CARBON	47K	5%	1/4W
R145	1-247-903-00	CARBON	1M	5%	1/4W	R340	1-249-437-11	CARBON	47K	5%	1/4W
R151	1-249-417-11	CARBON	1K	5%	1/4W F	R341	1-249-411-11	CARBON	330	5%	1/4W
R152	1-249-417-11	CARBON	1K	5%	1/4W	R342	1-249-437-11	CARBON	47K	5%	1/4W
R161	1-247-826-00	CARBON	620	5%	1/4W	R343	1-249-417-11	CARBON	1K	5%	1/4W F
R162	1-249-903-00	CARBON	1M	5%	1/4W	R351	1-249-435-11	CARBON	33K	5%	1/4W
R163	1-247-903-00	CARBON	1M	5%	1/4W	R352	1-249-421-11	CARBON	2.2K	5%	1/4W F
R164	1-249-419-11	CARBON	1.5K	5%	1/4W F	R353	1-247-807-31	CARBON	100	5%	1/4W
R165	1-247-863-91	CARBON	22K	5%	1/4W	R354	1-247-807-31	CARBON	100	5%	1/4W
R166	1-247-887-00	CARBON	220K	5%	1/4W	R355	1-249-421-11	CARBON	2.2K	5%	1/4W F
R167	1-249-429-11	CARBON	10K	5%	1/4W	R356	1-249-428-11	CARBON	8.2K	5%	1/4W F
R168	1-249-437-11	CARBON	47K	5%	1/4W	R357	1-249-425-11	CARBON	4.7K	5%	1/4W F
R169	1-249-421-11	CARBON	2.2K	5%	1/4W F	R358	1-249-425-11	CARBON	4.7K	5%	1/4W F
R170	1-249-441-11	CARBON	100K	5%	1/4W	R359	1-249-435-11	CARBON	33K	5%	1/4W
R171	1-249-429-11	CARBON	10K	5%	1/4W	R401	1-249-437-11	CARBON	47K	5%	1/4W
R173	1-249-437-11	CARBON	47K	5%	1/4W	R405	1-249-429-11	CARBON	10K	5%	1/4W
R178	1-249-421-11	CARBON	2.2K	5%	1/4W F	R411	1-249-437-11	CARBON	47K	5%	1/4W
R191	1-249-437-11	CARBON	47K	5%	1/4W	R412	1-249-437-11	CARBON	47K	5%	1/4W
R192	1-249-437-11	CARBON	47K	5%	1/4W	R414	1-249-429-11	CARBON	10K	5%	1/4W
R193	1-249-437-11	CARBON	47K	5%	1/4W	R415	1-249-435-11	CARBON	33K	5%	1/4W
R194	1-247-843-11	CARBON	3.3K	5%	1/4W	R416	1-249-437-11	CARBON	47K	5%	1/4W
R195	1-249-429-11	CARBON	10K	5%	1/4W	R417	1-249-437-11	CARBON	47K	5%	1/4W
R196	1-249-417-11	CARBON	1K	5%	1/4W F	R418	1-249-437-11	CARBON	47K	5%	1/4W
R197	1-249-441-11	CARBON	100K	5%	1/4W	R419	1-249-425-11	CARBON	4.7K	5%	1/4W F
R198	1-249-417-11	CARBON	1K	5%	1/4W F	R433	1-249-437-11	CARBON	47K	5%	1/4W
R199	1-249-429-11	CARBON	10K	5%	1/4W	R434	1-249-437-11	CARBON	47K	5%	1/4W
R301	1-249-435-11	CARBON	33K	5%	1/4W	R441	1-249-419-11	CARBON	1.5K	5%	1/4W F
R302	1-249-421-11	CARBON	2.2K	5%	1/4W F	R442	1-249-435-11	CARBON	33K	5%	1/4W
R303	1-247-807-31	CARBON	100	5%	1/4W	R443	1-249-429-11	CARBON	10K	5%	1/4W
R304	1-247-807-31	CARBON	100	5%	1/4W	R444	1-249-429-11	CARBON	10K	5%	1/4W
R305	1-249-421-11	CARBON	2.2K	5%	1/4W F	R446	1-249-420-11	CARBON	1.8K	5%	1/4W F
R306	1-249-428-11	CARBON	8.2K	5%	1/4W F	R451	1-247-807-31	CARBON	100	5%	1/4W
R307	1-249-425-11	CARBON	4.7K	5%	1/4W F	R461	1-249-382-11	CARBON	1.2	5%	1/6W F
R308	1-249-425-11	CARBON	4.7K	5%	1/4W F	R462	1-249-382-11	CARBON	1.2	5%	1/6W F
R309	1-247-863-91	CARBON	22K	5%	1/4W	R463	1-249-429-11	CARBON	10K	5%	1/4W
R311	1-247-903-00	CARBON	1M	5%	1/4W	R464	1-247-850-11	CARBON	6.2K	5%	1/4W
R312	1-247-883-00	CARBON	150K	5%	1/4W	R465	1-249-429-11	CARBON	10K	5%	1/4W
R313	1-249-441-11	CARBON	100K	5%	1/4W	R466	1-249-428-11	CARBON	8.2K	5%	1/4W F
R315	1-249-429-11	CARBON	10K	5%	1/4W	R491	1-249-419-11	CARBON	1.5K	5%	1/4W F
R316	1-249-432-11	CARBON	18K	5%	1/4W	R492	1-249-435-11	CARBON	33K	5%	1/4W
R317	1-249-429-11	CARBON	10K	5%	1/4W	R493	1-249-429-11	CARBON	10K	5%	1/4W
R318	1-249-429-11	CARBON	10K	5%	1/4W	R494	1-249-429-11	CARBON	10K	5%	1/4W
R319	1-247-893-11	CARBON	390K	5%	1/4W	R496	1-249-420-11	CARBON	1.8K	5%	1/4W F
R321	1-249-422-11	CARBON	2.7K	5%	1/4W F	R501	1-249-413-11	CARBON	470	5%	1/4W F
R322	1-249-428-11	CARBON	8.2K	5%	1/4W F	R502	1-249-425-11	CARBON	4.7K	5%	1/4W F
R324	1-247-876-11	CARBON	75K	5%	1/4W	R503	1-249-437-11	CARBON	47K	5%	1/4W
R325	1-249-437-11	CARBON	47K	5%	1/4W	R504	1-249-437-11	CARBON	47K	5%	1/4W
R326	1-249-437-11	CARBON	47K	5%	1/4W	R505	1-249-429-11	CARBON	10K	5%	1/4W
R327	1-249-437-11	CARBON	47K	5%	1/4W	R507	1-247-897-11	CARBON	560K	5%	1/4W
R328	1-247-876-11	CARBON	75K	5%	1/4W	R508	1-249-425-11	CARBON	4.7K	5%	1/4W F
R329	1-249-417-11	CARBON	1K	5%	1/4W F	R511	1-249-425-11	CARBON	4.7K	5%	1/4W F
R330	1-249-425-11	CARBON	4.7K	5%	1/4W F						(E)
						R512	1-249-427-11	CARBON	6.8K	5%	1/4W F
											(E)

Ref. No.	Part No.	Description			Remarks	Ref. No.	Part No.	Description			Remarks
R524	1-249-429-11	CARBON	10K	5%	1/4W	R740	1-249-429-11	CARBON	10K	5%	1/4W
R526	1-249-429-11	CARBON	10K	5%	1/4W	R741	1-249-429-11	CARBON	10K	5%	1/4W
R531	1-247-807-31	CARBON	100	5%	1/4W	R742	1-249-429-11	CARBON	10K	5%	1/4W
R532	1-247-807-31	CARBON	100	5%	1/4W	R751	1-247-791-91	CARBON	22	5%	1/4W
R539	1-247-807-31	CARBON	100	5%	1/4W	R752	1-247-791-91	CARBON	22	5%	1/4W
R540	1-247-807-31	CARBON	100	5%	1/4W	R753	1-247-791-91	CARBON	22	5%	1/4W
R541	1-247-807-31	CARBON	100	5%	1/4W	R754	1-247-791-91	CARBON	22	5%	1/4W
R542	1-247-807-31	CARBON	100	5%	1/4W	R755	1-249-437-11	CARBON	47K	5%	1/4W
R543	1-247-807-31	CARBON	100	5%	1/4W	R756	1-249-425-11	CARBON	4.7K	5%	1/4W F
R544	1-249-429-11	CARBON	10K	5%	1/4W	R757	1-249-441-11	CARBON	100K	5%	1/4W
R545	1-247-807-31	CARBON	100	5%	1/4W	R758	1-249-421-11	CARBON	2.2K	5%	1/4W F
R546	1-247-843-11	CARBON	3.3K	5%	1/4W	R776	1-247-807-31	CARBON	100	5%	1/4W
R547	1-247-807-31	CARBON	100	5%	1/4W	R777	1-247-807-31	CARBON	100	5%	1/4W
R560	1-249-429-11	CARBON	10K	5%	1/4W	R778	1-247-807-31	CARBON	100	5%	1/4W
R561	1-247-807-31	CARBON	100	5%	1/4W	R779	1-247-807-31	CARBON	100	5%	1/4W
R562	1-247-807-31	CARBON	100	5%	1/4W	R901	1-247-843-11	CARBON	3.3K	5%	1/4W
R563	1-247-807-31	CARBON	100	5%	1/4W	R902	1-249-415-11	CARBON	680	5%	1/4W F
R564	1-247-807-31	CARBON	100	5%	1/4W	R903	1-249-419-11	CARBON	1.5K	5%	1/4W F
R565	1-247-807-31	CARBON	100	5%	1/4W	R904	1-249-414-11	CARBON	560	5%	1/4W F
R566	1-247-807-31	CARBON	100	5%	1/4W	R905	1-249-425-11	CARBON	4.7K	5%	1/4W F
R567	1-247-807-31	CARBON	100	5%	1/4W	R906	1-247-843-11	CARBON	3.3K	5%	1/4W
R571	1-249-421-11	CARBON	2.2K	5%	1/4W F	R907	1-249-415-11	CARBON	680	5%	1/4W F
R572	1-249-441-11	CARBON	100K	5%	1/4W	R908	1-249-429-11	CARBON	10K	5%	1/4W
R575	1-249-429-11	CARBON	10K	5%	1/4W	R909	1-249-430-11	CARBON	12K	5%	1/4W
R576	1-249-429-11	CARBON	10K	5%	1/4W	R910	1-249-429-11	CARBON	10K	5%	1/4W
R577	1-247-863-91	CARBON	22K	5%	1/4W	R912	1-249-425-11	CARBON	4.7K	5%	1/4W F
R577	1-249-433-11	CARBON	22K	5%	1/4W(E)	R913	1-249-429-11	CARBON	10K	5%	1/4W
R580	1-249-437-11	CARBON	47K	5%	1/4W	R914	1-247-815-91	CARBON	220	5%	1/4W
R581	1-249-417-11	CARBON	1K	5%	1/4W F	R915	1-247-815-91	CARBON	220	5%	1/4W
R653	1-249-402-11	CARBON	56	5%	1/4W F	R916	1-249-437-11	CARBON	47K	5%	1/4W
R654	1-249-402-11	CARBON	56	5%	1/4W F	R917	1-249-437-11	CARBON	47K	5%	1/4W
R700	1-247-863-91	CARBON	22K	5%	1/4W	R918	1-249-437-11	CARBON	47K	5%	1/4W
R701	1-247-791-91	CARBON	22	5%	1/4W	R919	1-249-425-11	CARBON	4.7K	5%	1/4W F
R702	1-247-791-91	CARBON	22	5%	1/4W	R920	1-247-863-91	CARBON	22K	5%	1/4W
R703	1-247-791-91	CARBON	22	5%	1/4W	R921	1-247-863-91	CARBON	22K	5%	1/4W
R704	1-247-791-91	CARBON	22	5%	1/4W	R923	1-249-383-11	CARBON	1.5	5%	1/6W F
R705	1-249-437-11	CARBON	47K	5%	1/4W	R924	1-249-383-11	CARBON	1.5	5%	1/6W F
R706	1-249-437-11	CARBON	47K	5%	1/4W	< VARIABLE RESISTOR >					
R707	1-249-429-11	CARBON	10K	5%	1/4W	RV301	1-238-600-11	RES, ADJ, CARBON 10K			
R708	1-249-429-11	CARBON	10K	5%	1/4W	RV351	1-238-600-11	RES, ADJ, CARBON 10K			
R709	1-215-893-11	METAL OXIDE	1.5K	5%	2W F (US)	< RELAY >					
R709	1-215-892-11	METAL OXIDE	1K	5%	2W F (E)	RY701	1-515-920-11	RELAY (24V)			
R716	1-249-437-11	CARBON	47K	5%	1/4W	< TERMINAL >					
R726	1-247-807-31	CARBON	100	5%	1/4W	TM701	1-694-055-31	TERMINAL BOARD (SP)			
R727	1-247-807-31	CARBON	100	5%	1/4W	< VIBRATOR >					
R728	1-247-807-31	CARBON	100	5%	1/4W	X401	1-579-175-11	VIBRATOR, CERAMIC 10MHz			
R729	1-247-807-31	CARBON	100	5%	1/4W	X501	1-760-489-11	VIBRATOR, CERAMIC 5MHz			
R731	1-249-438-11	CARBON	56K	5%	1/4W	X502	1-567-098-41	VIBRATOR, CRYSTAL 32.768kHz			
R732	1-249-437-11	CARBON	47K	5%	1/4W	*****					
R734	1-249-429-11	CARBON	10K	5%	1/4W						
R735	1-249-425-11	CARBON	4.7K	5%	1/4W F						
R736	1-249-425-11	CARBON	4.7K	5%	1/4W F						
R737	1-247-791-91	CARBON	22	5%	1/4W						
R738	1-249-435-11	CARBON	33K	5%	1/4W						
R739	1-249-429-11	CARBON	10K	5%	1/4W						

PANEL

Ref. No.	Part No.	Description	Remarks
	A-4426-595-A	PANEL BOARD, COMPLETE *****	
	4-222-479-01	HOLDER, FL TUBE	
	4-222-480-01	SHEET (FL FILTER)	
*	4-949-935-91	CUSHION (FL)	
		< CAPACITOR >	
C601	1-124-584-00	ELECT 100uF 20%	10V
C602	1-165-319-11	CERAMIC CHIP 0.1uF	50V
C603	1-126-157-11	ELECT 10uF 20%	16V
C604	1-165-319-11	CERAMIC CHIP 0.1uF	50V
C605	1-165-319-11	CERAMIC CHIP 0.1uF	50V
C606	1-126-163-11	ELECT 4.7uF 20%	50V
C608	1-163-009-11	CERAMIC CHIP 0.001uF	10%
C609	1-124-584-00	ELECT 100uF 20%	10V
C610	1-165-319-11	CERAMIC CHIP 0.1uF	50V
C611	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C612	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C613	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C614	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C615	1-126-160-11	ELECT 1uF 20%	50V
C617	1-126-160-11	ELECT 1uF 20%	50V
C621	1-163-001-11	CERAMIC CHIP 220PF 10%	50V
C622	1-163-001-11	CERAMIC CHIP 220PF 10%	50V
C623	1-163-001-11	CERAMIC CHIP 220PF 10%	50V
C624	1-163-001-11	CERAMIC CHIP 220PF 10%	50V
C625	1-163-001-11	CERAMIC CHIP 220PF 10%	50V
C626	1-163-001-11	CERAMIC CHIP 220PF 10%	50V
C627	1-163-001-11	CERAMIC CHIP 220PF 10%	50V
C628	1-163-001-11	CERAMIC CHIP 220PF 10%	50V
C629	1-163-001-11	CERAMIC CHIP 220PF 10%	50V
C630	1-163-001-11	CERAMIC CHIP 220PF 10%	50V
C631	1-163-001-11	CERAMIC CHIP 220PF 10%	50V
C632	1-163-001-11	CERAMIC CHIP 220PF 10%	50V
C633	1-163-001-11	CERAMIC CHIP 220PF 10%	50V
C641	1-164-182-11	CERAMIC CHIP 0.0033uF 10%	50V
C642	1-126-157-11	ELECT 10uF 20%	16V
C643	1-126-157-11	ELECT 10uF 20%	16V
C644	1-124-584-00	ELECT 100uF 20%	10V
C645	1-165-319-11	CERAMIC CHIP 0.1uF	50V
C651	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C652	1-163-031-11	CERAMIC CHIP 0.01uF	50V
		< CONNECTOR >	
* CN601	1-568-852-11	SOCKET, CONNECTOR 9P	
CN601	1-784-731-11	CONNECTOR, FFC 9P	
		< DIODE >	
D601	8-719-210-33	DIODE EC10DS2TE12L	
D602	8-719-058-24	DIODE RB501V-40TE-17	
D611	8-719-074-81	DIODE MAA3864X-J300K (▶▶▶/▶▶▶)	
D612	8-719-074-81	DIODE MAA3864X-J300K (◀◀◀/◀◀◀)	
D613	8-719-074-81	DIODE MAA3864X-J300K (DBFB)	
D614	8-719-074-81	DIODE MAA3864X-J300K (SUR)	
D615	8-719-074-82	DIODE MAY3864X-J300K (CD ▶▶)	
D616	8-719-074-80	DIODE MVR3864X-J300K (ENTER)	
D625	8-719-074-83	DIODE MPG3864X-J300K (TAPE A ◀◀)	
D626	8-719-074-83	DIODE MPG3864X-J300K (TAPE A ▶▶)	

Ref. No.	Part No.	Description	Remarks
D628	8-719-074-81	DIODE MAA3864X-J300K (SELECTOR)	
D630	8-719-074-83	DIODE MPG3864X-J300K (TAPE B ◀◀)	
D631	8-719-074-83	DIODE MPG3864X-J300K (TAPE B ▶▶)	
D632	8-719-074-83	DIODE MPG3864X-J300K (CD ◻◻)	
		< FERRITE BEAD >	
FB601	1-500-242-22	FERRITE 0UH	
FB602	1-500-242-22	FERRITE 0UH	
FB603	1-500-242-22	FERRITE 0UH	
		< FILTER >	
FL601	1-517-773-11	INDICATOR TUBE, FLUORESCENT	
		< IC >	
IC601	8-759-573-63	IC TMP87CM74AF-6763	
IC602	8-759-332-18	IC GP1U27XB	
IC603	8-759-495-25	IC BA3833F-E2	
		< COIL >	
L601	1-408-777-00	INDUCTOR CHIP 10uH	
L602	1-408-777-00	INDUCTOR CHIP 10uH	
		< TRANSISTOR >	
Q601	8-729-620-05	TRANSISTOR 2SC2603TP-EF	
Q602	8-729-119-76	TRANSISTOR 2SA1115TP-EF	
Q603	8-729-119-76	TRANSISTOR 2SA1115TP-EF	
Q604	8-729-900-36	TRANSISTOR BA1F4M-TP	
Q605	8-729-900-36	TRANSISTOR BA1F4M-TP	
Q608	8-729-900-36	TRANSISTOR BA1F4M-TP	
Q609	8-729-900-36	TRANSISTOR BA1F4M-TP	
Q611	8-729-119-76	TRANSISTOR 2SA1115TP-EF	
Q612	8-729-119-76	TRANSISTOR 2SA1115TP-EF	
Q621	8-729-620-05	TRANSISTOR 2SC2603TP-EF	
		< RESISTOR >	
R601	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
R602	1-216-073-00	METAL CHIP 10K 5%	1/10W
R603	1-216-121-91	RES,CHIP 1M 5%	1/10W
R604	1-216-085-00	METAL CHIP 33K 5%	1/10W
R605	1-216-085-00	METAL CHIP 33K 5%	1/10W
R606	1-216-085-00	METAL CHIP 33K 5%	1/10W
R607	1-216-073-00	METAL CHIP 10K 5%	1/10W
R608	1-216-073-00	METAL CHIP 10K 5%	1/10W
R609	1-216-073-00	METAL CHIP 10K 5%	1/10W
R610	1-216-073-00	METAL CHIP 10K 5%	1/10W
R611	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
R612	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
R613	1-216-025-91	RES,CHIP 100 5%	1/10W
R613	1-216-028-00	METAL CHIP 130 5%	1/10W
R614	1-216-017-91	RES,CHIP 47 5%	1/10W
R615	1-216-009-91	RES,CHIP 22 5%	1/10W
R616	1-216-009-91	RES,CHIP 22 5%	1/10W
R617	1-216-081-00	METAL CHIP 22K 5%	1/10W
R618	1-216-107-00	METAL CHIP 270K 5%	1/10W
R619	1-216-097-91	RES,CHIP 100K 5%	1/10W
R620	1-216-089-91	RES,CHIP 47K 5%	1/10W
R621	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
R622	1-216-089-91	RES,CHIP 47K 5%	1/10W
R623	1-216-073-00	METAL CHIP 10K 5%	1/10W
R624	1-216-097-91	RES,CHIP 100K 5%	1/10W

PANEL

POWER AMP

Ref. No.	Part No.	Description	Remarks
R625	1-216-089-91	RES,CHIP 47K 5%	1/10W
R626	1-216-033-00	METAL CHIP 220 5%	1/10W
R627	1-216-089-91	RES,CHIP 47K 5%	1/10W
R628	1-216-033-00	METAL CHIP 220 5%	1/10W
R629	1-216-099-00	METAL CHIP 120K 5%	1/10W
R633	1-216-027-00	METAL CHIP 120 5%	1/10W
R634	1-216-027-00	METAL CHIP 120 5%	1/10W
R635	1-216-027-00	METAL CHIP 120 5%	1/10W
R636	1-216-027-00	METAL CHIP 120 5%	1/10W
R637	1-216-025-91	RES,CHIP 100 5%	1/10W
R637	1-216-028-00	METAL CHIP 130 5%	1/10W
R638	1-216-029-00	METAL CHIP 150 5%	1/10W
R645	1-216-033-00	METAL CHIP 220 5%	1/10W
R646	1-216-033-00	METAL CHIP 220 5%	1/10W
R648	1-216-033-00	METAL CHIP 220 5%	1/10W
R649	1-216-033-00	METAL CHIP 220 5%	1/10W
R650	1-216-033-00	METAL CHIP 220 5%	1/10W
R651	1-216-033-00	METAL CHIP 220 5%	1/10W
R655	1-216-069-00	METAL CHIP 6.8K 5%	1/10W
R661	1-216-069-00	METAL CHIP 6.8K 5%	1/10W
R662	1-216-033-00	METAL CHIP 220 5%	1/10W
R663	1-216-035-00	METAL CHIP 270 5%	1/10W
R664	1-216-039-00	METAL CHIP 390 5%	1/10W
R665	1-216-041-00	METAL CHIP 470 5%	1/10W
R666	1-216-045-00	METAL CHIP 680 5%	1/10W
R667	1-216-047-91	RES,CHIP 820 5%	1/10W
R668	1-216-051-00	METAL CHIP 1.2K 5%	1/10W
R669	1-216-053-00	METAL CHIP 1.5K 5%	1/10W
R670	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R671	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
R672	1-216-065-91	RES,CHIP 4.7K 5%	1/10W
R673	1-216-069-00	METAL CHIP 6.8K 5%	1/10W
R674	1-216-073-00	METAL CHIP 10K 5%	1/10W
R675	1-216-079-00	METAL CHIP 18K 5%	1/10W
R676	1-216-689-11	METAL CHIP 39K 0.5%	1/10W
R677	1-216-069-00	METAL CHIP 6.8K 5%	1/10W
R678	1-216-033-00	METAL CHIP 220 5%	1/10W
R679	1-216-035-00	METAL CHIP 270 5%	1/10W
R680	1-216-039-00	METAL CHIP 390 5%	1/10W
R681	1-216-041-00	METAL CHIP 470 5%	1/10W
R682	1-216-045-00	METAL CHIP 680 5%	1/10W
R683	1-216-047-91	RES,CHIP 820 5%	1/10W
R685	1-216-069-00	METAL CHIP 6.8K 5%	1/10W
< SWITCH >			
S601	1-762-875-21	SWITCH, KEYBOARD(TAPE A ▶▶)	
S602	1-762-875-21	SWITCH, KEYBOARD(TAPE A ◀◀)	
S603	1-762-875-21	SWITCH, KEYBOARD(TUNER/BAND)	
S604	1-762-875-21	SWITCH, KEYBOARD(DISPLAY/MEMO)	
S605	1-762-875-21	SWITCH, KEYBOARD(CLOCK/TIMWER SET)	
S606	1-762-875-21	SWITCH, KEYBOARD(DISPLAY/MEMORY)	
S607	1-762-875-21	SWITCH, KEYBOARD(SEARCH)	
S608	1-762-875-21	SWITCH, KEYBOARD(SCAN)	
S609	1-762-875-21	SWITCH, KEYBOARD(INPUT)	
S610	1-762-875-21	SWITCH, KEYBOARD(CHECK)	
S611	1-762-875-21	SWITCH, KEYBOARD(CLEAR)	
S612	1-762-875-21	SWITCH, KEYBOARD(DELETE)	
S613	1-762-875-21	SWITCH, KEYBOARD(◀◀,▶▶)	
S614	1-762-875-21	SWITCH, KEYBOARD(FILE SELECT)	
S615	1-762-875-21	SWITCH, KEYBOARD(ENTER)	

Ref. No.	Part No.	Description	Remarks
S616	1-762-875-21	SWITCH, KEYBOARD(▶▶,▶▶)	
S617	1-762-875-21	SWITCH, KEYBOARD(TAPE B ◀◀)	
S618	1-762-875-21	SWITCH, KEYBOARD(TAPE B ▶▶)	
S619	1-762-875-21	SWITCH, KEYBOARD(CD/PLAY)	
S620	1-762-875-21	SWITCH, KEYBOARD(GROOVE)	
S621	1-762-875-21	SWITCH, KEYBOARD(DBFB)	
S622	1-762-875-21	SWITCH, KEYBOARD(SUR)	
S623	1-762-875-21	SWITCH, KEYBOARD(STOP)	
S651	1-473-392-31	ENCODER, ROTARY(VOLUME)	
S652	1-473-534-11	ENCODER, ROTARY(SELECTOR)	
< VIBRATOR >			
X601	1-579-952-21	VIBRATOR, CERAMIC(8MHZ)	

A-4426-598-A	POWER AMP BOARD, COMPLETE (US)		

A-4426-599-A	POWER AMP BOARD, COMPLETE (E)		

< CAPACITOR >			
C801	1-128-582-11	ELECT	10uF 20% 100V
C802	1-163-007-11	CERAMIC CHIP	680PF 10% 50V
C803	1-163-001-11	CERAMIC CHIP	220PF 10% 50V
C804	1-126-967-11	ELECT	47uF 20% 50V
C806	1-126-967-11	ELECT	47uF 20% 50V
C807	1-128-560-11	ELECT	22uF 20% 100V
C809	1-128-560-11	ELECT	22uF 20% 100V
C810	1-163-038-91	CERAMIC CHIP	0.1uF 25V
C811	1-136-163-00	FILM	0.068uF 5% 50V
C812	1-136-163-00	FILM	0.068uF 5% 50V
C821	1-106-220-00	MYLAR	0.1uF 5% 100V
C822	1-117-750-11	ELECT	3300uF 20% 63V
C823	1-126-925-11	ELECT	470uF 20% 10V
C851	1-128-582-11	ELECT	10uF 20% 100V
C852	1-163-007-11	CERAMIC CHIP	680PF 10% 50V
C853	1-163-001-11	CERAMIC CHIP	220PF 10% 50V
C854	1-126-967-11	ELECT	47uF 20% 50V
C856	1-126-967-11	ELECT	47uF 20% 50V
C857	1-128-560-11	ELECT	22uF 20% 100V
C861	1-136-163-00	FILM	0.068uF 5% 50V
C862	1-136-163-00	FILM	0.068uF 5% 50V
C871	1-106-220-00	MYLAR	0.1uF 5% 100V
C872	1-117-750-11	ELECT	3300uF 20% 63V
< CONNECTOR >			
* CN803	1-564-511-11	PLUG, CONNECTOR 8P	
< DIODE >			
D801	8-719-988-61	DIODE 1SS355TE-17	
D811	8-719-988-61	DIODE 1SS355TE-17	
D812	8-719-988-61	DIODE 1SS355TE-17	
D813	8-719-988-61	DIODE 1SS355TE-17	
D821	8-719-510-68	DIODE D5SBA204101	
D851	8-719-988-61	DIODE 1SS355TE-17	
< IC >			
IC801	8-749-922-65	IC STK4221MK2 (US)	
IC801	8-749-921-68	IC STK4231MK2 (E)	

POWER AMP						SW/POWER						TABLE SENSOR						TRANS					
Ref. No.	Part No.	Description				Remarks	Ref. No.	Part No.	Description				Remarks										
< TRANSISTOR >						< SWITCH >																	
Q801	8-729-140-84	TRANSISTOR 2SC1841TP-PAFAEA					R659	1-216-041-00	METAL CHIP 470 5% 1/10W														
Q811	8-729-900-36	TRANSISTOR BA1F4M-TP					< SWITCH >																
Q812	8-729-620-05	TRANSISTOR 2SC2603TP-EF					S625	1-762-875-21	SWITCH, KEYBOARD (POWER)														
Q851	8-729-140-84	TRANSISTOR 2SC1841TP-PAFAEA					S626	1-762-875-21	SWITCH, KEYBOARD (HI-SPEED DUBBING)														
< RESISTOR >						S627	1-762-875-21	SWITCH, KEYBOARD (CD SYNCHRO)															
R801	1-216-049-91	RES,CHIP	1K	5%	1/10W	S628	1-762-875-21	SWITCH, KEYBOARD (REC)															
R802	1-216-089-91	RES,CHIP	47K	5%	1/10W	S629	1-762-875-21	SWITCH, KEYBOARD (PAUSE)															
R803	1-216-041-00	METAL CHIP	470	5%	1/10W	*****																	
R804	1-216-089-91	RES,CHIP	47K	5%	1/10W	* 1-663-971-11	TABLE SENSOR BOARD																
R805	1-249-425-11	CARBON	4.7K	5%	1/4W F	*****																	
R806	1-249-425-11	CARBON	4.7K	5%	1/4W F	< CONNECTOR >																	
△ R807	1-212-881-11	F(US)IBLE	100	5%	1/4W F	* CN51	1-568-944-11	PIN, CONNECTOR 6P															
R808	1-220-893-11	METAL	0.22	10%	5W	CN52	1-506-481-11	PIN, CONNECTOR 2P															
R809	1-260-076-11	CARBON	10	5%	1/2W	< IC >																	
R811	1-216-049-91	RES,CHIP	1K	5%	1/10W	IC51	8-749-924-18	IC PHOTO INTERRUPTER RPI-1391															
R812	1-216-077-00	METAL CHIP	15K	5%	1/10W	IC52	8-749-924-18	IC PHOTO INTERRUPTER RPI-1391															
R813	1-216-097-91	RES,CHIP	100K	5%	1/10W	IC53	8-749-924-18	IC PHOTO INTERRUPTER RPI-1391															
R815	1-247-843-11	CARBON	3.3K	5%	1/4W	< RESISTOR >																	
R816	1-247-843-11	CARBON	3.3K	5%	1/4W	R51	1-249-416-11	CARBON	820	5%	1/4W F												
R821	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	R52	1-249-416-11	CARBON	820	5%	1/4W F												
R822	1-216-109-00	METAL CHIP	330K	5%	1/10W	R53	1-249-416-11	CARBON	820	5%	1/4W F												
R823	1-216-073-00	METAL CHIP	10K	5%	1/10W	*****																	
R824	1-216-073-00	METAL CHIP	10K	5%	1/10W	1-674-313-11	TRANS BOARD																
R825	1-216-097-91	RES,CHIP	100K	5%	1/10W	*****																	
R826	1-216-097-91	RES,CHIP	100K	5%	1/10W	1-533-217-31	HOLDER,FUSE																
R827	1-216-095-00	METAL CHIP	82K	5%	1/10W	1-533-233-11	HOLDER,FUSE																
R851	1-216-049-91	RES,CHIP	1K	5%	1/10W	< CONNECTOR >																	
R852	1-216-089-91	RES,CHIP	47K	5%	1/10W	CN991	1-564-321-00	PIN, CONNECTOR 2P															
R853	1-216-041-00	METAL CHIP	470	5%	1/10W	* CN992	1-564-518-11	PLUG, CONNECTOR 3P															
R854	1-216-089-91	RES,CHIP	47K	5%	1/10W	* CN993	1-564-522-11	PLUG, CONNECTOR 7P															
R855	1-249-425-11	CARBON	4.7K	5%	1/4W F	< FUSE >																	
R856	1-249-425-11	CARBON	4.7K	5%	1/4W F	△ F991	1-532-504-51	FUSE TIMELAG 4A/250V (E)															
△ R857	1-212-881-11	F US IBLE	100	5%	1/4W F	△ F992	1-533-310-51	FUSE GRASS TUBE 6.3A/125V															
R858	1-220-893-11	METAL	0.22	10%	5W	△ F993	1-532-506-51	FUSE 6.3A/250V (E)															
R859	1-260-076-11	CARBON	10	5%	1/2W	△ F994	1-532-506-51	FUSE 6.3A/250V (E)															
R861	1-216-049-91	RES,CHIP	1K	5%	1/10W	< RESISTOR >																	
R862	1-216-077-00	METAL CHIP	15K	5%	1/10W	△ R991	1-219-119-81	FUSIBLE	0.1	5%	1/4W F												
R863	1-216-097-91	RES,CHIP	100K	5%	1/10W	△ R992	1-219-119-81	FUSIBLE	0.1	5%	1/4W F												
< THERMISTOR >						△ R993	1-219-119-81	FUSIBLE	0.1	5%	1/4W F												
TH811	1-807-796-11	THERMISTOR				△ R994	1-219-119-81	FUSIBLE	0.1	5%	1/4W F												
*****						△ R995	1-202-725-00	SOLID	3.3M	10%	1/2W (US)												
1-674-312-11 SW/POWER BOARD						*****																	
*****						△ S991	1-572-675-11	SWITCH, POWER VOLTAGE CHANGE															
< DIODE >						*****																	
D617	8-719-074-80	DIODE MVR3864X-J300K (REC)																					
D618	8-719-074-82	DIODE MAY3864X-J300K (PAUSE)																					
< RESISTOR >																							
R631	1-216-029-00	METAL CHIP	150	5%	1/10W																		
R632	1-216-025-91	RES,CHIP	100	5%	1/10W																		
R656	1-216-033-00	METAL CHIP	220	5%	1/10W																		
R657	1-216-035-00	METAL CHIP	270	5%	1/10W																		
R658	1-216-039-00	METAL CHIP	390	5%	1/10W																		
The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.																							

Ref. No.	Part No.	Description	Remarks

MISCELLANEOUS			

5	1-693-457-11	ENCAPSULATED COMPONENT(TUNER UNIT)	
6	1-769-972-11	WIRE(FLAT TYPE)(13 CORE)	
6	1-773-004-11	WIRE(FLAT TYPE)(15 CORE)	
8	1-765-332-11	WIRE (FLAT TYPE) (15 CORE)	
9	1-773-055-11	WIRE (FLAT TYPE) (17 CORE)	
95	1-769-920-11	WIRE (FLAT TYPE) (9 CORE)	
△ 109	1-569-007-21	ADAPTOR, CONVERSION 2P (E)	
110	1-782-558-21	WIRE (FLAT TYPE) (16 CORE)	
111	1-782-559-21	WIRE (FLAT TYPE) (9 CORE)	
△ 114	1-783-531-11	CORD, POWER (US)	
△ 114	1-575-653-11	CORD, POWER (E)	
322	1-777-874-11	WIRE (FLAT TYPE) (16 CORE)	
△ 401	8-848-379-31	OPTICAL PICK-UP KSS-213BA/F-NP	
FAN101	1-698-792-11	FAN, DC	
HP101	A-2056-681-B	DECK (A) ASSY, HEAD(230AWR2)(*NOTE)	
HP101	A-2056-683-B	DECK (A) ASSY, HEAD(230PWR2)(*NOTE)	
HRPE101	A-2056-682-B	DECK (B) ASSY, HEAD(230AWR2)(*NOTE)	
HRPE101	A-2056-684-B	DECK (B) ASSY, HEAD(230PWR2)(*NOTE)	
M1	A-2004-628-A	MOTOR ASSY, CAPSTAN	
M101	X-2646-110-1	T, T CHASSIS ASSY (MG) (F) (SPINDLE)	
M102	X-2625-769-1	MOTOR GEAR ASSY (MB) (RP) (SLED)	
△ T991	1-431-842-11	TRANSFORMER, POWER (E)	
△ T991	1-431-348-31	TRANSFORMER, POWER (US)	

HARDWARE LIST

#1	7-685-646-79	SCREW +BVTP 3 × 8 TYPE2 N-S
#2	7-685-872-09	SCREW +BVTT 3 × 8 (S)
#3	7-685-871-01	SCREW +BVTT 3 × 6 (S)
#4	7-685-650-79	SCREW +BVTP 3 × 16 TYPE2 IT-3
#5	7-685-873-09	SCREW +BVTT 3 × 10 (S)
#6	7-685-875-09	SCREW +BVTT 3 × 14 (S)
#7	7-685-781-09	SCREW +PTT 2 × 4 (S)
#8	7-685-783-09	SCREW +PTT 2 × 6 (S)
#9	7-685-851-04	SCREW +BVTT 2 × 4 (S)
#10	7-685-534-19	SCREW +BTP 2.6 × 8 TYPE2 N-S
#11	7-628-254-15	SCREW +PS 2.6 × 6
#12	7-628-254-50	SCREW +PS 2.6 × 16
#13	7-685-850-04	SCREW +BVTT 2 × 3 (S)
#14	7-685-132-19	SCREW +BTP 2.6 × 5 TYPE2 N-S
#15	7-685-107-11	SCREW +P 2 × 12 TYPE2 NON-SLIT
#16	7-685-535-19	SCREW +BTP 2.6 × 10 TYPE2 N-S
#17	7-685-134-19	SCREW (+ PTPWH) (2.6 × 8)
#18	7-1685-103-19	+ PTPWH (2 × 5)
#19	7-627-553-17	SCREW,PRECISION +P 2 × 2
#20	7-621-770-67	SCREW +PWH 2.6 × 6
#21	7-685-852-04	SCREW +BVTT 2 × 5 (S)

The components identified by mark △ or dotted line with mark △ are critical for safety.
Replace only with part number specified.

SS-MC1

SERVICE MANUAL

*US Model
E Model*



This set is the speaker system in
MHC-MC1.

SPECIFICATIONS

Speaker system	3-way, bass-reflex type
Speaker units	
Woofer:	17 cm (6 ³ / ₄ in), cone type
Tweeter:	5 cm (2 in), cone type
Super Tweeter:	2 cm (³ / ₁₆ in), dome type
Nominal impedance	8 ohms
Dimensions (w/h/d)	Approx. 215 × 373 × 267 mm (8 ¹ / ₂ × 14 ³ / ₄ × 10 ⁵ / ₈ in)
Mass	Approx. 4.0 kg (8 lb 13 oz) net per speaker

Design and specification subject to change without
notice.

SPEAKER SYSTEM

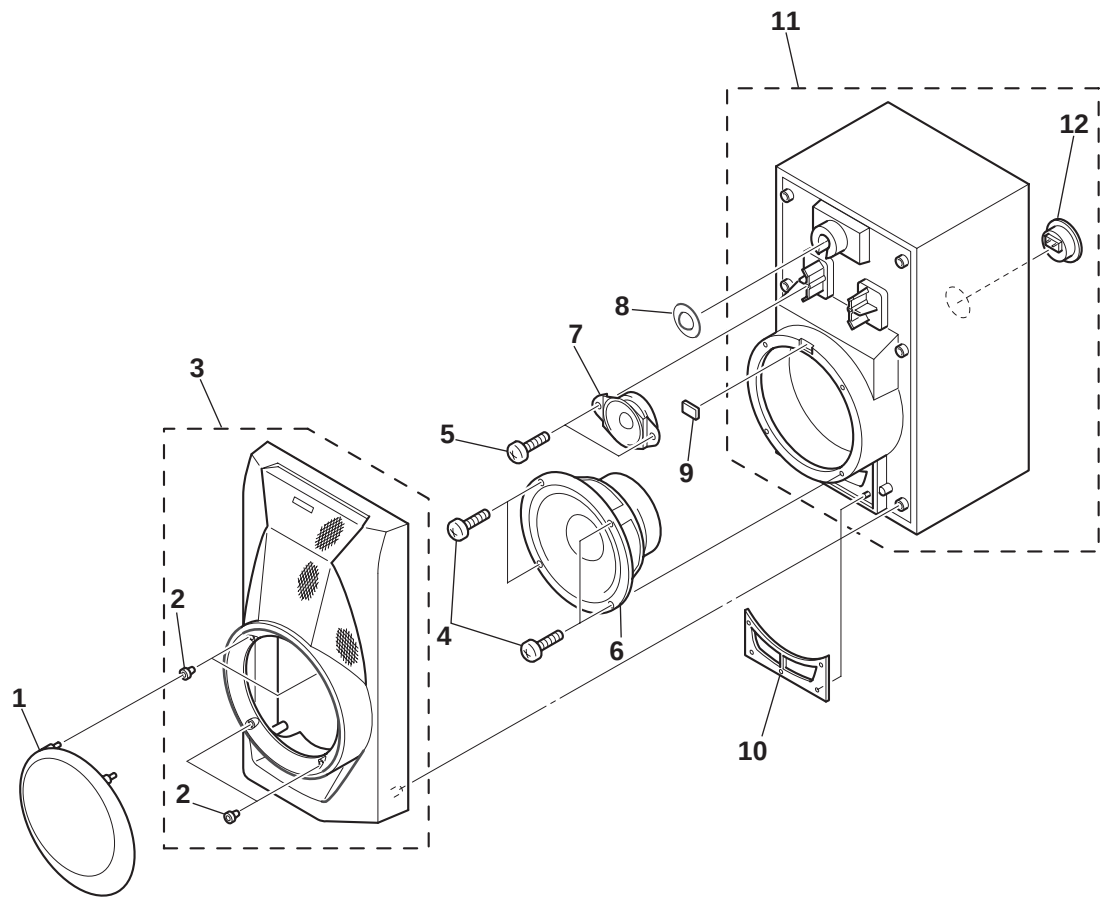
SONY®



EXPLODED VIEW AND PARTS LIST

NOTE:

- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
1	X-4951-146-1	FRAME ASSY, GRILLE		7	1-529-298-11	SPEAKER (5CM)	
* 2	4-963-075-01	CATCHER		8	1-505-563-11	SPEAKER (2CM)	
3	X-4951-181-1	PANEL ASSY, FRONT		9	4-942-029-01	PACKING	
4	4-874-614-61	SCREW (4) (3.5X16), TAPPING		10	4-217-551-01	PACKING	
5	4-991-132-01	SCREW (4) (3.5X12), +BVTP		11	A-4411-642-A	CABINET ASSY, SPEAKER	
6	1-529-297-11	SPEAKER (16CM)		12	1-537-332-11	TERMINAL BOARD	